

# Annual Report 2010



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## ***Letter from the Chairman***

Since the appointment of the TRA Board and the beginning of its operations in April 2007, the TRA has made great efforts to establish a modern regulatory framework and to develop the telecommunications sector in Lebanon, despite numerous challenges, obstacles and political instability prevailing in the country that the Authority had to face.

However, the efforts of the TRA and its partners to develop Lebanon's telecommunications sector have not yet lead to the creation of the desired conditions for Lebanon to leap-frog and reclaim a leading position in this field.

In fact, unfortunately, Lebanon still lags far behind other countries...

Four years after the TRA inception, our efforts as a regulator did not allow us reach true achievements yet. The TRA can only succeed in its mission through the active participation of the private sector and our constant cooperation with government institutions.

Today, we are ready to move ahead and work hand in hand with private and public institutions to take the Lebanese telecommunications sector to a much higher level.

Opening the telecommunications market to competition will improve services, reduce prices, increase consumer choices, and improve the performance of the sector as a whole. Competition in the telecommunications market is pivotal to the creation of new jobs, fueling economic growth, propelling the performance of many other sectors, improving the quality of life, health and education for the Lebanese citizens', creating new industries, and taking the country into the next performance level to compete better in the knowledge and creativity age with neighboring and other countries. This could all be done in while protecting government interest and developing the private sector.

The time has come for the TRA to play its intended role in the sector development.

The time has come to free the sector from false promises of modernization.

The time has come to work hand in hand with the public and private sectors to draw and implement a modernization plan for the telecommunications sector in Lebanon.

The time has come to create new investment opportunities and attract foreign investments in the telecommunications sector.

The time has come to implement true fair competition for the benefit of Lebanese consumers and industries.



The time has come to make real progress towards the beginning of a renaissance in telecommunications in Lebanon that would become the engine for the National economy's growth and help for the country's comeback on the regional and international scene.

We believe that it must become part of the government policy that it is the human, legal and economic right of every citizen to obtain a broadband access. The bandwidth should be no less than 10M in year 2015 and 20M in year 2020, knowing that the TRA ambitions for citizens and companies exceed these objectives.

Today, with the help of a highly skilled and dedicated TRA team and the cooperation with concerned stakeholders, I am confident that we will all be joining forces to help Lebanon regain its leading position in telecommunications. A brilliant future lies ahead of us and we will not miss out on opportunities for economic prosperity of our country.



**Dr. Imad Y. Hoballah**

**Acting Chairman and CEO**

## *A little bit about the TRA*

The TRA is an independent public institution established by Law 431/2002. It is legally mandated to liberalize, regulate, and develop telecommunications in Lebanon, and to protect telecommunications consumers' rights. The TRA's mission is to establish a regulatory environment that enables a competitive telecommunications market to deliver state-of-the-art services at affordable prices to the broadest spectrum of the Lebanese population. The TRA is also responsible for building a thriving, competitive and innovative telecommunications market.

The TRA effectively started operating upon the nomination of its Board members in February 2007.

The TRA is composed of four main units each headed by a TRA Board member and an administrative, financial and audit core supervised directly by the TRA Chairman.

The four units are:

- **The Market and Competition Unit (MCU)** which is responsible for all economic affairs related to the telecommunications markets including financial and technical aspects.
- **The Telecommunications Technologies Unit (TTU)** which deals with all technological matters related to spectrum, technical resources, telecommunication equipment and supplies.
- **The Legal Affairs and Licensing Unit (LALU)** which is responsible for monitoring the activities of Service Providers, managing licensing procedures and updating the legal framework of the telecom sector in line with its needs. In addition, it prepares dispute and complaint documents referred to it by the TRA and mediates between telecommunications Service Providers, relevant administrations and municipalities concerning the utilization of public properties.
- **The Information and Consumer Affairs Unit (ICAU)** which oversees all information matters with the aim of increasing public awareness and protecting consumer interests while promoting transparency.

The departments that are directly reporting to the TRA chairman and CEO are:

- The department of administrative affairs responsible for the implementation of the TRA's internal organization, management of human resources and its general administration;
- The department of financial affairs responsible for project financing, overseeing its optimal implementation and taking care of accounting issues; and
- The department of internal auditing, responsible for auditing the budget and TRA accounts in line with the decisions of the TRA's administration.

## **Introduction**

The TRA in 2010 has gone through many challenges and difficulties. The Board and team however moved forward with the TRA mission to develop the sector and build a successful institution based on the commitment to serve Lebanese consumers and the growth of the Lebanese economy.

One of the most recent challenges this year was the resignation of Dr. Kamal Shehadi, TRA Chairman from February 2007 till April 2010. Dr. Kamal Shehadi announced his resignation from his position as Chairman and CEO of the TRA on April 23rd after having served at the Authority and transmitted his knowledge and positive thinking to the team for more than 3 years. Dr. Shehadi handed over his prerogatives to Dr. Imad Hoballah, Board Member and Head of Telecommunications Technologies Unit serving as Acting Chairman and CEO since May 1st, 2010.

The importance of the TRA work lies in the sector's development through consumers' rights protection, promotion of competition, creation of investment opportunities, monitoring of market performance, and much more. In 2010, the TRA dealt with these challenges as an opportunity to work actively, and reiterate the telecommunications priorities both internally and externally.

In 2010, the TRA took major steps towards the development of the regulatory framework in Lebanon. Spectrum is a scarce and vital resource for the development of telecommunications services and a major asset to the Lebanese economy. In that regard, the TRA Board endorsed the Spectrum Right to Use fees (RTU) and Administration Cost (SAC) Decree that, once reviewed by the State Council and issued by the Council of Ministers, will ensure an efficient utilization of Radio Frequencies. The application of the RTU and SAC decree will also guarantee a fair return to the public treasury with a potential increase of its revenues and a better management of the spectrum. In 2010, the TRA approved two major regulations that directly relate to consumer protection in addition to the Consumer Affairs Regulation issued in 2009: the "Code of Practice for Value Added Services" and the "Human EMF Exposure Limit Regulation". The TRA Board also approved the extension for interim licenses for Internet and Data Service Providers (ISPs & DSPs).

In line with its prerogatives mandated by Law 431, the TRA initiated and finalized two major guidelines that relate to the "Safety requirements for telecommunications networks operating in Lebanon" and "The Measures to Deal with Illegal Operators". Both guidelines were approved by the TRA Board in July 2010.

In 2010, the TRA focused its efforts on conducting the relevant market studies allowing the development of new regulations and the update of existing ones as well as the definition of adequate market requirements and the necessary conditions to promote networks development and security. On the other hand, the TRA emphasized its work on strengthening the regulatory framework through licensing Service Providers, maintaining its efforts in organizing and allocating spectrum as a rare national resource and protecting consumers through the development of the institution's ability to receive and handle complaints and make sure operators abide by the TRA regulations.



One of the major achievements this year lies in the participation of Dr. Imad Hoballah, TRA Acting Chairman and CEO, as Vice Chairman and later as Head of the Lebanese delegation that participated in the ITU plenipotentiary conference in Guadalajara, Mexico on October 4-22, and which prodigious efforts lead to the condemnation of the Israeli enemy. Indeed, Dr. Imad Hoballah lead the Lebanese delegation who prepared and followed-up on the technical file that was presented at the ITU conference where Israel was condemned of piracy and attacks against fixed and cellular telephone networks in Lebanon who was granted “Assistance and support to countries in special need for rebuilding their telecommunication sector” and “Assistance and support to Lebanon for rebuilding its telecommunication networks (fixed and mobile)”.

In November 2010, Lebanon achieved another major success by hosting the 14th ASMG meeting that was marked by the active participation of more than 200 high profile experts. The TRA organized this conference in Beirut in coordination with the Arab League despite required logistics, budgetary constraints, and the ambiguity of the political conditions that persisted at the time. The conference attracted top regional experts to Lebanon to discuss management and regulatory spectrum issues and prepare for the Arab positions on the different agenda items that will be presented at the ITU world Radio Conference in Geneva in 2012.

2010 was also marked by constructive and effective efforts to ensure the independence of the Authority from any political or budgetary pressure while also developing the relationship with the Ministry of Telecommunications (MOT) and strengthening the cooperation between the two entities and other government institutions as well as with the private sector to liberalize the telecommunications market. Both entities worked together on various projects to accelerate the dissemination of advanced services at affordable prices, clarify, and develop, the sector public policy to ensure its success. The TRA also demonstrated its determination to ensure the application Telecommunications Law 431/2002 and to facilitate a smooth and fast transition of the Authority's remaining prerogatives from the MoT.

The TRA also worked in 2010 various fronts related to the institution's capacity building. Indeed, the TRA focused on strengthening the Authority's human resources by capitalizing on the staff and concentrating the efforts on training the team based on international standards. The TRA also worked on ensuring the required financial resources and equipment (Quality of Service measuring and monitoring equipment, and spectrum management control systems and other equipment) for the institution to carry on with its mission.

In 2010, with the help of a highly dedicated team and in coordination with various ministries, government agencies, and the civil society, the TRA has been able to make significant progress towards assuming its mandate as outlined in by Law 431/2002 to reform the telecommunications market in Lebanon. The TRA is proud of its achievements and considers its duty to contribute to the national economic prosperity and to Lebanon empowerment.

## I- PAVING THE WAY TOWARDS LIBERALIZATION ■ ■ ■

Liberalization is key to the development of the telecommunications sector and to the rapid growth of the national economy. The TRA is legally mandated to liberalize, regulate, and develop telecommunications in Lebanon. In that regard, the Authority has undertaken a significant number of studies related to the mobile, fixed, and broadband fields and has gathered, studied, and analyzed crucial data that will help the Government of Lebanon make the pertinent strategic decisions for the development of telecommunications in Lebanon.

### 1 Monitoring the mobile market ■ ■ ■

Further to the renewal of both Mobile Network Managers' -Orascom Telecommunications Holding (MIC1, Alfa) and Zain Telecommunications (MIC 2, Touch) - Management Agreements, the mobile sector in Lebanon witnessed, in 2010, additional prices decrease, mainly related to prepaid offers, and resulting in a continuous growth in the number of subscribers. However, despite these price reductions, the mobile charges remain higher than the regional average rates.

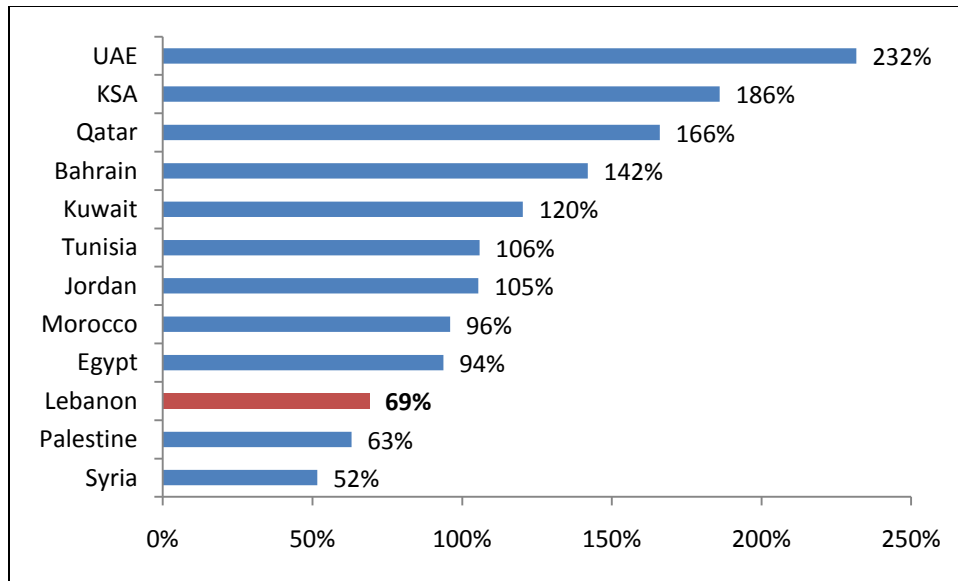


Through market analysis and investigations, the TRA sought to ensure compliance with the governmental mandate. The TRA closely collaborated with the Ministry of Telecommunications (MOT) to determine and define formulas for mobile Key Performance Indicators (KPIs) to assess future 3G performance. The TRA completed an in-depth analysis of the current services and offers available on the mobile market and suggested a set of remedies to ensure a fair and transparent treatment to all subscribers. In 2010, the TRA also worked with other governmental institutions on the issuance of security guidelines to be implemented on telecommunications networks.

#### 1.1 Mobile market overview and price benchmarks

In February 2010, Zain Telecommunications and Orascom Telecom Management Contracts were renewed for a 6 months period and included a renewal clause under the same terms and conditions valid for an additional two consecutive three months period.

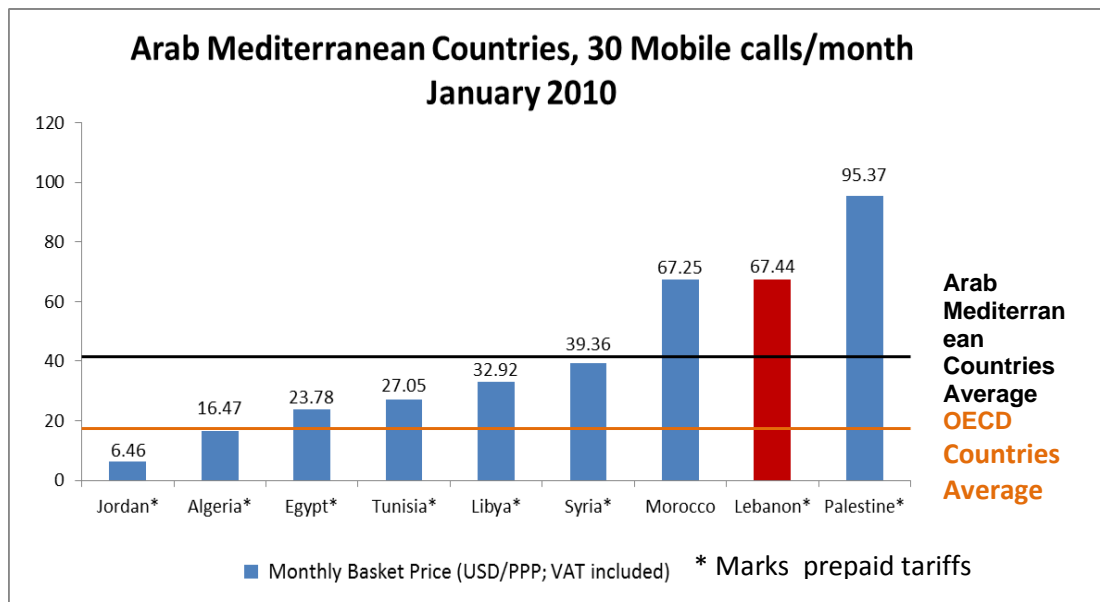
Despite the continuous growth in the number of mobile subscribers, Lebanon's mobile penetration still lags far behind regional standards. In 2010, the penetration approximately reached 68% increasing as such by 20% in one year. In 2009, new price schemes were introduced for prepaid subscribers such as off peak reductions. The mobile blended Average Revenue per User (ARPU) has been decreasing over the last year but remains high compared to regional markets. The monthly blended ARPU decreased by 15% during the last year and was estimated at around 43\$.



### Mobile Penetration in regional countries, 2010

Source: AAG reports, TRA analysis

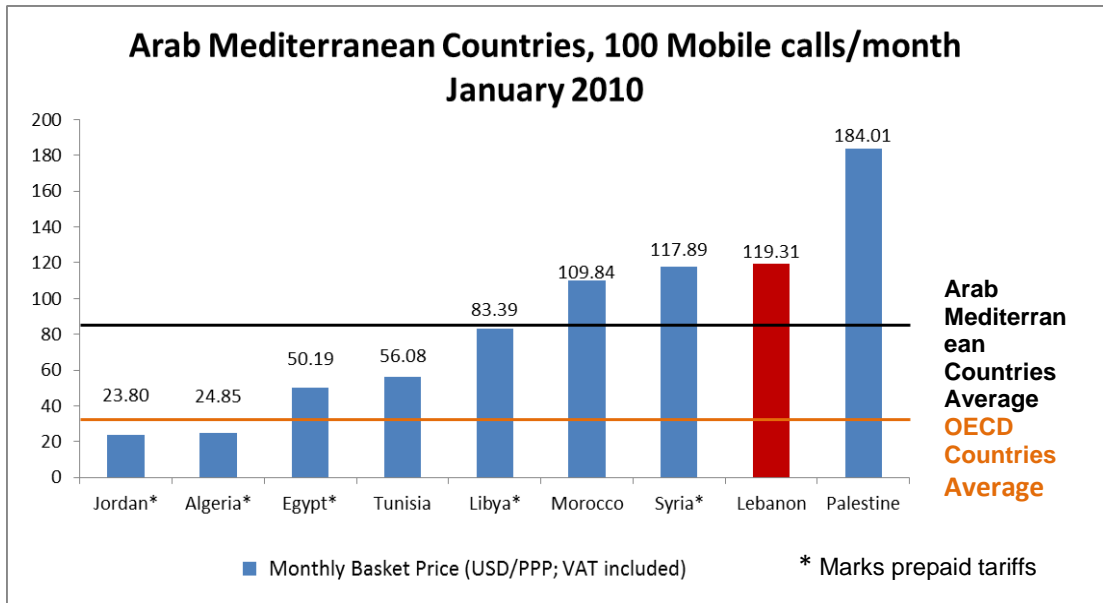
Despite the decrease witnessed by mobile tariffs in 2009, prices remain very high compared to Arab Mediterranean countries. The graph below shows that, for a “30 calls/month and 60 SMS” basket, Lebanon’s mobile prices still ranks among the highest rated benchmarked countries and is approximately 4 times more expensive than the OECD countries average.



Source: AREGNET Price Benchmarking Study 2010 - Analyzed by the TRA Lebanon

Further analysis conducted on mobile prices and taking into consideration the introduction of off-peak rates during the last quarter of 2010, shows slight improvement for Lebanon “one rank” among the Arab Mediterranean countries. However, mobile rates in Lebanon remain much more expensive than the averages in both OECD and Arab Mediterranean Countries (calculated in January 2010).

On the other hand, considering a “100 calls/month and 140 SMS” basket as shown in the graph below, Lebanon’s mobile offer is also among the highest rated benchmarked countries and is still around 4 times more expensive than the OECD countries average.



**Source:** AREGNET Price Benchmarking Study 2010 - Analyzed by the TRA Lebanon

Benchmark studies rank Lebanon 18<sup>th</sup> over 19 regional Arab countries in terms of competition and services offered. Mobile Managers propose only 4 different prepaid and postpaid plans whereas other countries offer more than 25 different plans to reach all segments.

Lebanon’s mobile market present situation results from both its structure and the terms and conditions of the Management Agreements. Indeed, current conditions do not enable Mobile Network Managers to control retail prices nor to introduce new packages or bundles without a lengthy administrative approval procedure. Also, the Management Agreement structure does not incentivize the Mobile Network Managers to efficiently complete the appropriate expansions, which results in a less-than-optimum network design and optimization and thus, in a very poor quality of service.

Lebanon is among the very few Arab countries (Algeria, Palestine and Yemen) not to offer yet 3G services. However, In October 2010, the Ministry of Telecommunications (MOT) through both Mobile Network Managers launched a tender for the implementation of 3G services, which are expected to be launched in 2011.

## 1.2 Analysis of mobile commercial discrepancies

This project consisted of a thorough study of the prices, terms and conditions (Ts & Cs), and packages of the mobile services offered by both Network Managers (MIC1 and MIC2). The study aimed at eliminating all unfair discrepancies between the tariffs of services offered by Network Managers and ensuring transparent and fair treatment of all subscribers. Services analyzed covered postpaid, prepaid and corporate markets.

- The first step consisted in the review of all mobile services and offers provided by the two Mobile Network Managers as described on their respective websites. Details were checked with the customer care wherever tariffs and service conditions that are stated on the website were not clear;
- The listed services were tested as part of a second step. The compliancy with the description mentioned on their website, be it at the service functionality or at the charging level, was also checked;
- Once the tests were concluded, a comparative table was established to highlight the discrepancies in service functionalities and pricing between the operator's website and customer care, and the real services as provided to the subscribers.

Several meetings were held between the TRA and the Ministry of Telecommunications (MOT) in order to probe these discrepancies and obtain the necessary clarifications from the Mobile Network Managers. A final recommendation based on a thorough technical analysis, was submitted to the Ministry of Telecommunications (MOT). The recommendations entailed, among others, changes to the price structure of some value added services, changes to the diffusion of information whether through the customer care center or the website and elimination of certain unnecessary bundles.

### ***Case study: Credit Transfer service***

Since the introduction of the credit transfer services, the mobile market has witnessed the birth of a secondary market where users and point of sales sell dollars and validity periods to low-usage subscribers'. This phenomenon has alarmed the TRA and the Ministry of Telecommunications (MOT) and for fear of misuse of the service and abuse of users with low income.

Therefore a detailed study on the Credit Transfer service, and the customer behavior and voucher life cycle was initiated. Analysis of the Credit Transfer data and subscriber recharge behavior complemented by a field survey, and led to a better comprehension of the subscribers' behavior and needs.

On the finding of unfair treatment of low income users, the TRA recommended the elimination of these secondary markets through the introduction of different mobile packages where the entry point is cheaper and the voucher life cycle is longer. These recommendations, along with other more detailed ones were presented to the Ministry of Telecommunications (MOT).

### **1.3 Setting KPIs for 3G services**

The TRA, in its function of Quality of Service monitor, had issued the Quality of Service Regulation that defines the minimum set of Key Performance Indicators (KPIs) to be met by Service Providers in the mobile, fixed and Internet markets. As a continuation of this role, the TRA has recently closely worked with the Ministry of Telecommunications (MOT) in order to define the set of KPIs applicable to the new 3G services to be launched by the MoT.

As a result of the effort, the Quality of Service indicators are part of the Management Agreements signed by the MoT and both Mobile Network Managers. Definition and calculation methods for those KPIs are listed in schedule 1 of both Management Agreements and cover the services that are currently provided by the Mobile Network Managers, mainly 2G and 2.5G services, voice and Data.

In its effort to upgrade the mobile networks and introduce 3G services, the Ministry of Telecommunications (MOT) has requested that TRA define the set of KPIs for 3G services. For each KPI, a detailed definition has been agreed upon as well as a calculation formula depending on the equipment supplier's recommendations and specifications. Those 3G KPIs are essential to the successful launch of advanced data services by the Network Managers.

### **1.4 Lawful intercept requirements for BlackBerry services**

BlackBerry services have recently raised security concerns in Lebanon as well as in other countries around the world (KSA, UAE and India). Therefore, the TRA closely coordinated with the concerned Lebanese authorities, and initiated discussions on the implementation of the Lawful Interception Law and subsequent Decrees in order to define the national requirements to ensure the compliance of BlackBerry services with the Lebanese Laws. The TRA was commissioned to lead the discussions and negotiations with Research in Motion (RIM) -provider of BlackBerry services- related to the current Lawful Interception concerns and potential solutions.

The TRA held several discussions, conference calls, and meetings with RIM technical, legal and commercial representatives. RIM has proposed a solution that is still being studied by the TRA and the concerned Lebanese authorities.

### **1.5 Security requirements on telecommunications networks**

The security and integrity of the telecommunications networks in Lebanon has become a hot topic in view of the recent developments in the national security. Consequently, the TRA issued crucial network security guidelines for the telecommunications networks in Lebanon.

This paper defines the recommended MIC1 and MIC2 networks detailed audit procedures in order to isolate and mitigate any existing or potential loopholes/backdoors or security breaches, violation risks and misuse of users and subscribers confidential information.

Finally this paper plans the application of new security and ICT control policies by all telecom operators in Lebanon, including the MoT owned fixed network and operated through Ogero, the two Mobile Network Managers (MIC1 and MIC2), and Internet and Data Service Providers.

This paper was delivered to, and discussed with, the Ministry of Telecommunications (MOT) and the concerned Governmental Authorities in Q3 of 2010.

## 2. Assessing the fixed and international markets ■ ■ ■

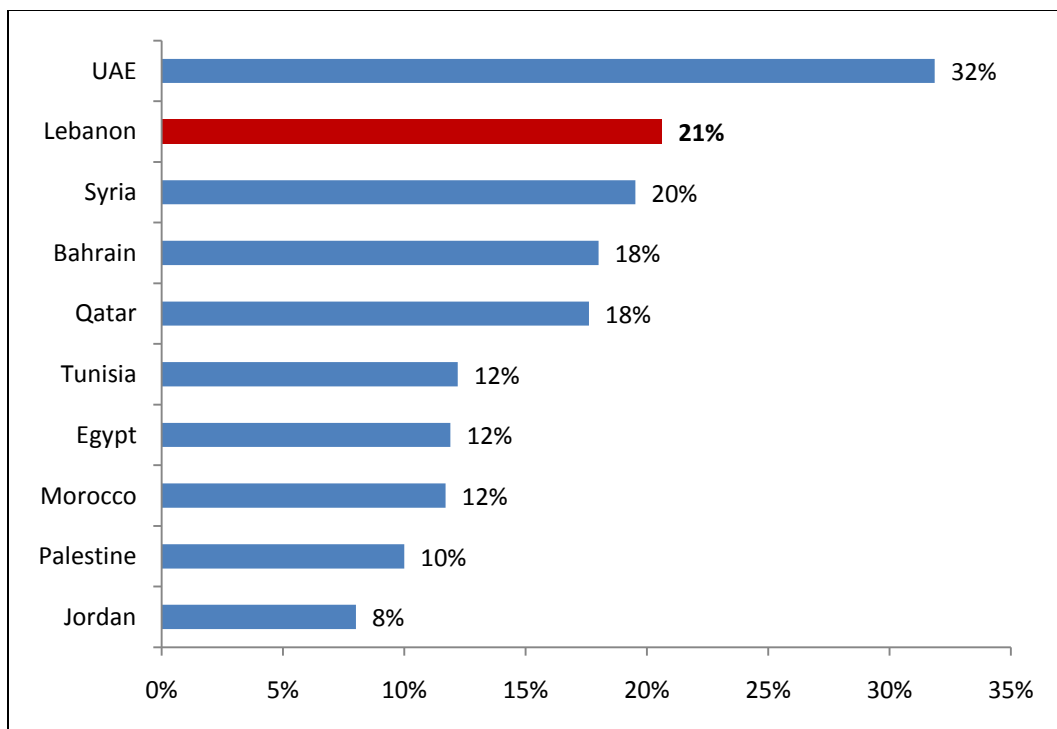
Lebanon's fixed-line market is well positioned in terms of penetration when compared to regional countries. This year, the fixed line residential household penetration reached 62% and has been stimulated mainly by the growing demand for ADSL services. On pricing, benchmarks show that Lebanon, despite its competitiveness with Arab Mediterranean countries, is still positioned well above the OECD average prices for PSTN (Public Switched Telephone Network) services.



The main bottlenecks on the fixed network causing the lack of advanced and innovative services are due to the outdated fixed network architecture (PSTN). In 2010, the Ministry of Telecommunications (MOT) started large projects in order to increase the international bandwidth capacity and to expand and modernize the national transmission network.

### 2.1 Fixed and international markets overview and price benchmarks

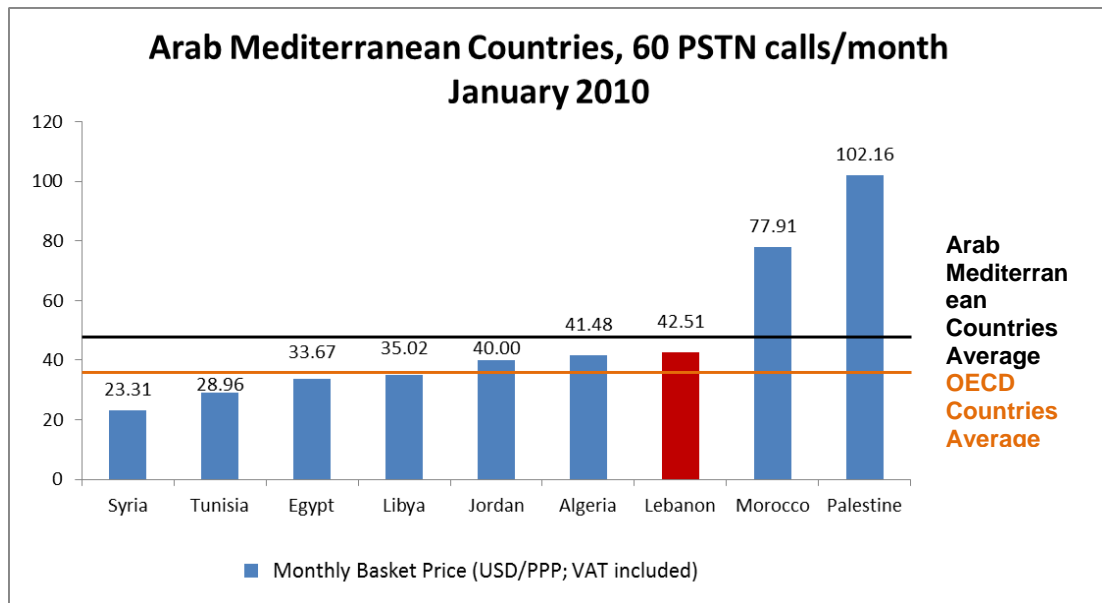
The fixed line household penetration rate for residential subscribers reached approximately 62% at the end of 2010. International benchmarks show that Lebanon is regionally well positioned in terms of fixed line penetration and pricing, however lags behind the average of OECD countries.



**Fixed Line Penetration per Population as of Q4 2010**

Source: AAG reports, TRA analysis

Benchmarking the cost of a “60 PSTN calls/month” basket shows that, despite Lebanon’s competitiveness with Arab Mediterranean countries, tariffs are still well above the OECD average, which is approximately 37 USD/PPP.



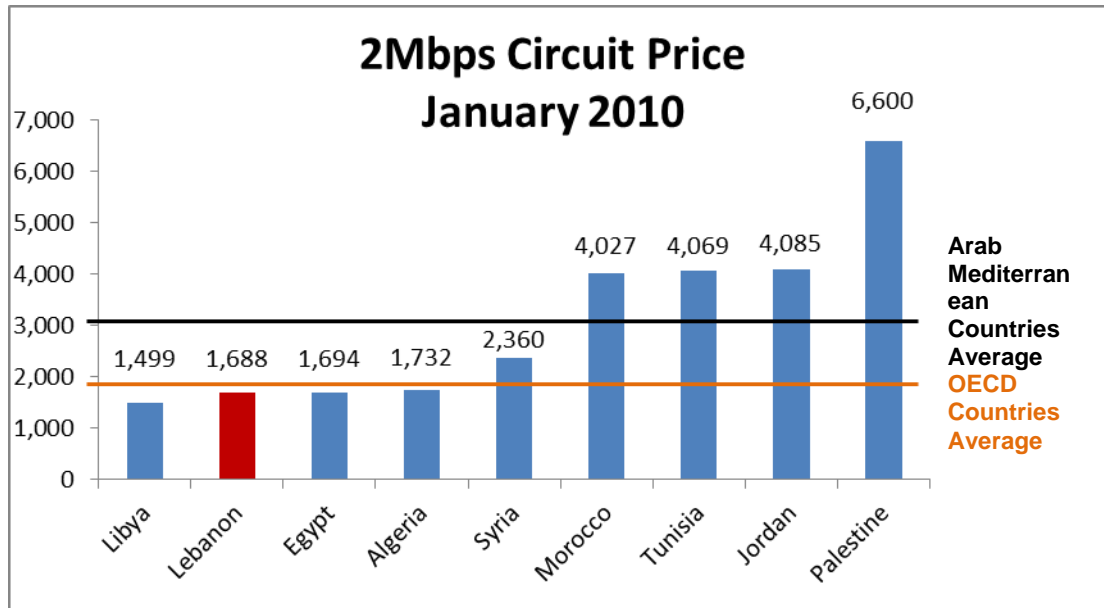
**Source:** AREGNET Price Benchmarking Study 2010 - Analyzed by the TRA Lebanon

In Lebanon, businesses are not subject to special tariffs. Nevertheless, benchmarking the cost of a “260 PSTN calls/month” basket shows that Lebanon is still competitive when compared to Arab Mediterranean countries, while its tariffs remain well above the OECD average, which is approximately 87 USD/PPP (Lebanon ranks 5<sup>th</sup> over 9 benchmarked countries).

The gap between the averages of Lebanon and the Arab Mediterranean countries has widened over the last year (2009-2010) primarily because the prices in the Arab Mediterranean countries have decreased while in Lebanon prices remained the same. The same applies to the OECD average but at a larger scale.

On the other hand, the benchmark of the Digital Leased Line basket price shows that Lebanon is in line with Arab Mediterranean and OECD countries at low speeds (64kbps) but is less expensive at higher speeds (2Mbps). The graph below shows that the 2Mbps Digital Leased Line basket in OECD and Arab Mediterranean countries is respectively 1.1 and 1.8 times more expensive than in Lebanon.





**Monthly Basket Price (USD/PPP; VAT included)**

**Source:** AREGNET Price Benchmarking Study 2010 - Analyzed by the TRA Lebanon

The main reason behind the slow growth in fixed-line penetration is the lack of bundled and innovative services. The outdated fixed network architecture (PSTN) does not enable the introduction of New Generation Network (NGN) services or Intelligent Network (IN) services such as Toll Free Calling, Friends and Family, SMS over fixed network, etc... Another bottleneck refers to the limited international capacity and the lack of redundancy at the international carrier transit level. Due to high prices and limited bandwidth, illegal Voice over IP services are widespread despite the large international call tariffs cuts by the Ministry of Telecommunications (MOT) the last few years.

In 2010, the fixed and international markets witnessed important upgrades and expansions. In order to accommodate for technology advances and the increased demand for new services, major investments were undertaken by the MoT on the national transmission infrastructure and the international capacity. The MoT launched a project aiming at expanding and modernizing the national transmission network by laying down a fully meshed fiber optic network of 4,400 km of backbone along with versatile active switching and cross-connect components.

When compared to last year, the total international capacity for voice and data doubled in 2010 to reach 2.5Gbps as of October 2010. Also, the participation in the ownership of the new high capacity submarine cable system (IMEWE) will provide Lebanon with 120Gbps of international bandwidth capacity. The IMEWE cable has been launched for commercial use in December 2010. Moreover, the Ministry undertook an upgrade in the capacity of the existing Cadmus Submarine Fiber Optical cable from a 10Gbps to 200Gbps (20 lambdas). The upgrade was completed by the end of December 2010. In total, the international bandwidth capacity increased by more than 168 times at the end of 2010 compared to the end of year 2009.

## **2.2 Studies on backhaul, backbone and international transmission costs and fees**

Two major studies were undertaken in 2010. The first one relates to international capacity where the TRA suggested a new set of tariffs reflecting the cost of providing international capacity. The second one analyses the DSL national transmission and includes a suggestion to the MoT for a new wholesale pricing scheme.

### ***International Capacity:***

Telecommunications Service Providers are suffering from the lack of international capacity as well as from high tariffs. The total available international bandwidth increased by a factor of 168 from its previous value of 2.5Gbps further to the recent completion of the technical operational tests on the international submarine fiber optical cable IMEWE, the expected ten-fold increase in the available international bandwidth (~ 120Gbps) and the latest International Submarine Fiber Optical Cable Cadmus of 20 Lambdas (200 Gbps) upgrade. The expected increase in international bandwidth capacity will be shortly made commercially available for ISPs, mobile, fixed and corporate users. Consequently, the expected abundance and new investment incurred by the Ministry required the reassessment of the MoT's international bandwidth current tariffs. The TRA in that regard, aimed to recommend to the Ministry a new set of tariffs reflecting the cost of providing international capacity. The study was based on estimated CAPEX and OPEX for old and new investments in submarine cables, Internet peering agreements and other incurred capital and Operational expenditures.

The analysis showed that the tariffs currently paid by Service Providers remain extremely high when compared to the estimated costs, resulting therefore in an unhealthy market situation, whereas services stay tremendously expensive with low bit rates (low speed) and non-optimal quality of service.

With the advent of the new international capacity for bandwidth 'Thirsty' services, Service Providers are expected to purchase very high international bandwidth capacity. Subsequently, the TRA has proposed new bulk tariffs for international bandwidth capacity based on the cost estimation bared by the MoT.

### ***DSL National Transmission:***

As part of the review of wholesale tariffs related to DSL services, the Ministry of Telecommunications (MOT) sought to assess VLAN services tariffs (national transmission services) as per Decree 16852. The TRA was requested a wholesale pricing study based on benchmarking national VLAN services as offered in other countries and that would eventually result in tariffs update. The TRA opted for the analysis of the national transmission services offered by France Telecom (FT) in France in particular since the French model enjoys a mature market in terms of backhaul capacity provisioning and offering.

Consequently, the TRA's study included a suggestion to the MoT for a new wholesale pricing scheme that is meant to encourage the broadband network growth. This pricing scheme was accompanied

with a study on the total costs and charges that shall be borne by Service Providers for the provisioning of DSL services.

### 2.3 Investigation on the maintenance of the cable in the South

Following a cut of the National Submarine Optical Fiber cable from Ras-Beirut to Saida that caused an outage of all telecom services from and to the South Lebanon, the Minister of Telecommunications appointed a technical committee from the TRA to investigate the cause of the total outage and to follow-up on the reparation of the damaged cable. The committee held several meetings with high and mid-level management key personnel and technicians at the Ministry of Telecommunications (MOT) and Ogero in order to understand the Operation and Maintenance work processes and identify the problem and suggest pertinent recommendations. In addition, the committee spent three days on-board of the cable ship (Raymond Croze) to identify the real cause of the cut and to follow-up on the reparation process.

The committee issued its report that included a clear analysis of the existing network, the cause of the outage, and a set of recommendations for the prevention of future outages and improvement of the existing Operation and Maintenance work processes.

### 3. Analyzing the Internet and broadband markets ■ ■ ■

Since the launch of ADSL services in 2007, the TRA has been continuously monitoring the development and implementation of broadband services. In 2009, the penetration of broadband services has increased by more than 45%, to reach around 24% at the end of 2010. Despite the growth witnessed in 2010 and the increased coverage, the subscribers for broadband services still suffer from a poor quality of service for residential market, high prices and limited availability.



The major bottleneck hindering the wide adoption of true broadband services being the lack of Ultra High Speed Telecommunications Infrastructure, and the absence of competitive offers for wholesale services, the TRA has been working extensively on determining the wholesale DSL co-location fees and line sharing.

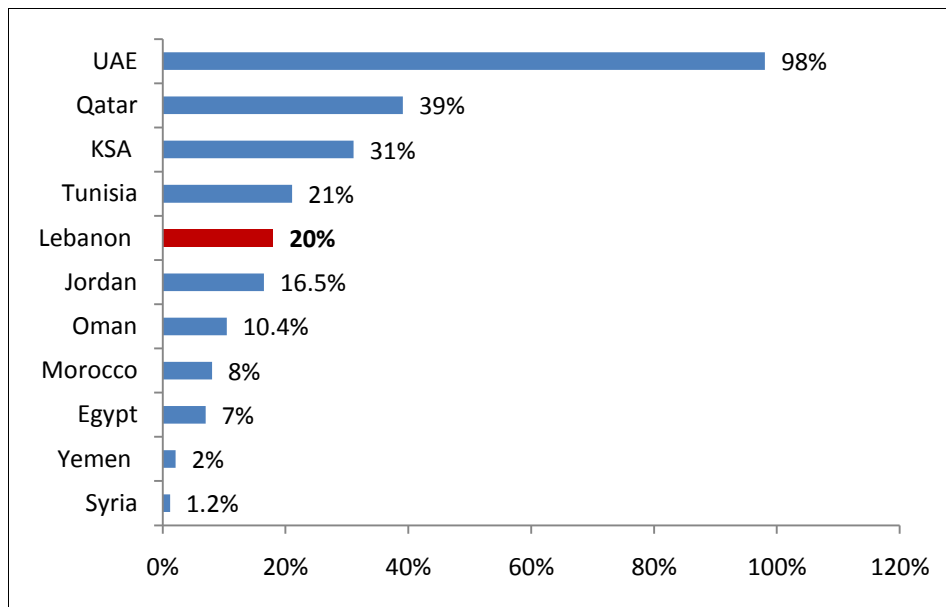
#### 3.1 Internet and broadband markets overview and price benchmarks

Since the launch of DSL and wireless broadband services in 2007, the TRA has continuously monitored the market. The broadband market remains underdeveloped in terms of residential and business customers' needs. When compared to regional and international countries, services offered in Lebanon, lag behind in terms of quality, bandwidth and range of advanced services.

Currently, Internet and wireless broadband services are provided by 16 licensed Internet Service Providers (ISPs) using the local wireless networks of 4 Data Service Providers (DSPs) offering residential and corporate solutions. The Internet penetration, including all types of services as well as unlicensed providers, is estimated at 44% of the households (~ 11% of population) in 2010.

ADSL services are provided by ISPs who access the local loop through bitstream services provided by the Ministry of Telecommunications (MOT) or the four DSPs. In turn, the DSPs access the local loop of the Ministry through line sharing services. There are 8 private ISPs and the MoT providing retail ADSL services for speeds ranging from 128Kbps to 1Mbps for residential users and up to 2Mbps for business customers.

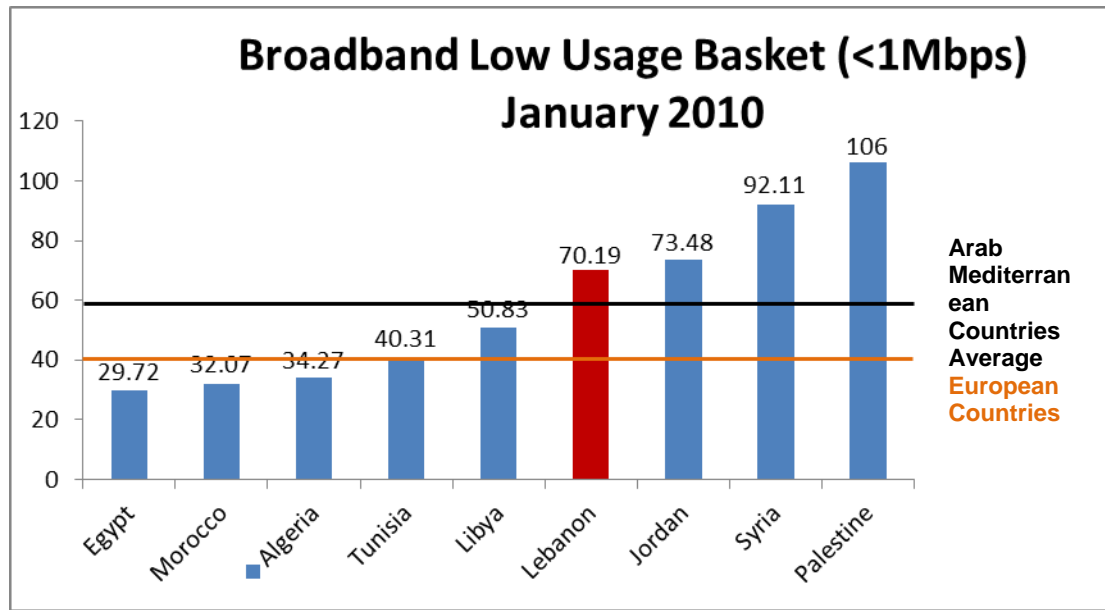
During 2010, there were around 81 new Central Offices (COs) equipped for offering DSL services increasing the total number of equipped COs to 170 as of September 2010. The DSL market witnessed a growth of 6 percentage points in 2010 reaching a household penetration of approximately 20%.



**ADSL Penetration per Household as of Q4 2010**

**Source:** AAG reports, National Regulatory Authorities' websites, TRA analysis

Residential broadband tariffs for low speed services (less than 1Mbps) offered in Lebanon are expensive. The graph below shows that Lebanon's broadband service is ranked among the highest rated in the Arab Mediterranean countries and is 1.7 times more expensive than European countries. It is to be noted that Lebanon is among the very few countries still applying the usage-based broadband pricing scheme.



**Monthly Basket Price (USD/PPP; VAT included)**

**Source:** AREGNET Price Benchmarking Study 2010 - Analyzed by the TRA Lebanon

Several bottlenecks hinder the development of the broadband market; most importantly the lack of a true high speed and high capacity NGN national transmission network. The upgrades and expansion of the national transmission network and the international capacity announced by the MOT are expected to ensure that even suburban and rural areas Central Offices will not lack anymore fiber optic connectivity. On the other hand, the expansion of the transmission network will enable DSPs to cater for the increased needs of ADSL subscribers and to offer a wider range of advanced services with a better quality of service.

### 3.2 Study on ADSL co-location cost and line sharing

In 2010 and in addition to the various DSL transmission and international capacity cost and fees studies described here above, the TRA has estimated the DSL co-location cost and presented it to the MoT.

The Ministry of Telecommunications (MOT) is currently offering the line sharing services to DSPs for the provision of the DSL service. This line sharing service requires the collocation of the DSP equipment within the Central Offices of the Ministry. However, some prices and fees related to this collocation are not clearly stated in the related decrees.

The TRA undertook a detailed study supporting the recommendation of those fees and submitted it to the Ministry of Telecommunications (MOT).

## II- STRENGTHENING THE REGULATORY FRAMEWORK

The TRA's mission is to promote competition, ensure market stability, and protect the rights of telecommunications services users. The TRA issues licenses, regulations, and decisions, manages the spectrum and the numbering plan, monitors the market for any abuse of dominant market position and anti-competitive practices, and takes remedial action when necessary.

In 2010, the TRA took major steps towards the development of the regulatory framework in Lebanon and worked on crucial regulatory guidelines and studies across a number of sectors. In that regard, the TRA Board endorsed the Spectrum Right to Use fees (RTU) and Administration Cost (SAC) Decree, approved two major regulations that directly relate to consumer protection in addition to the Consumer Affairs Regulation issued in 2009 and validated the extension for interim licenses for Internet and Data Service providers allowing them therefore to operate legally. In line with its prerogatives mandated by Law 431, the TRA initiated, finalized and issued in July 2010 two major guidelines that relate to the "Safety requirements for telecommunications networks operating in Lebanon" and the measures to deal with illegal operators.

The TRA also focused on the management of scarce resources such as spectrum and numbering as well as on consumers' protection.

TRA Board Approvals	Approved by Board	Sent to MOT
Spectrum Right to Use fees (RTU) decree to Minister of Telecommunications	21/7/2010	23/7/2010
Human EMF Exposure Limit Regulation	31/3/2010	13/04/2010
Code of Practice for Value Added Services	29/3/2010	13/04/2010

**Regulations and guidelines approved by the TRA Board in 2010**

### 1. Conducting regulatory affairs

In 2010, the TRA upheld its commitment to the equal treatment of telecommunications Service Providers in Lebanon by renewing the existing extending the interim licenses for an additional one-year period. The TRA also conducted several legal and technical studies and developed guidelines throughout the year pertaining to various topics and aiming at developing the telecommunications sector in Lebanon.



## **1.1 Licensing Service Providers**

Under Law 431, the TRA has the authority to grant licenses to telecommunications Services Providers for the types of services listed under article 19-1 of such Law.

As in 2009, the TRA has renewed the interim licenses it had previously granted to DSPs and ISPs for an additional one-year period, pending the issuance of the licensing regulations, which the TRA has prepared in their final form. In 2010, these amounted to a total of twenty-four licenses, broken down into seven DSP licenses and seventeen ISP licenses.

In addition, the TRA renewed two licenses for point-to-point microwave links that it had granted in the past.

The TRA also issued a number of licenses at the request of various governmental authorities; these licenses should enable such governmental authorities to carry out their duties and mission as provided for under applicable law.

The TRA awarded three temporary licenses to Huawei, Nokia Siemens Networks and Ericsson for purposes of trialing on 3G technologies. These licenses, which have now expired, are limited in scope, geography and duration.

Finally, the TRA focused on the outstanding issues in connection with broadband licensing and finalized the application forms and draft licenses of Private and Land Mobile Radio, Maritime Radio Services, Aeronautical Radio Services, Amateur Radio Services and Satellite Radio Services, which are to be used in the context of the application of the Licensing Regulation.

## **1.2 Litigations**

In 2010, the TRA continued to follow-up on various litigations, including former law suits that are still ongoing and a number of law suits that were brought during the year. In line with stakeholders' right to object to any type of decision taken by the TRA, the institution dealt with various contentious exchanges, both with other governmental entities and the various telecommunications Service Providers, which are often amicably resolved as a result of the continuous dialogue with the private sector.

## **1.3 Law and reform**

The TRA has continued the enhancements in 2010 of the regulatory framework that is necessary to foster the expansion of the Lebanese economy.

### **1.3.1 The E-commerce and IT Law**

In 2010, the TRA participated in the drafting of an e-commerce, information technology, and data protection law. The draft law lays down the rules that should govern e-commerce and notably e-transactions, e-signatures, and the protection of personal data. The draft law also contemplates the

establishment of an independent authority that will monitor compliance with the law. The TRA's experience as an independent regulator has proved to be extremely valuable when defining the features, mission and prerogatives of the new authority that is to be set up. The TRA has contributed to shape the draft law in an effort to meet the needs of the Lebanese economy while taking into account, among others, the constraints that are inherent to the Lebanese public sector and the information technology aspects of the draft law.

### **1.3.2 The competition Law**

The TRA has also held several bilateral meetings with the Ministry of Economy and Trade to examine the latest competition law draft, both from the standpoint of the TRA's status as a market regulator for the telecommunications sector and from the perspective of the TRA's specific prerogatives in the realm of market competition as expressly outlined in Law No. 431.

## **1.4 Issuing and updating draft regulations and decrees**

As part of the liberalization process and the telecommunications market development, the TRA has published a wide number of regulations in various fields during its past years of activity. In 2010, the TRA updated existing regulations, planned to publish additional ones and drafted a number of new regulations and policy papers.

### **1.4.1 Issuing the Human EMF Exposure Limit Regulation**

The TRA is mandated by the Telecom Law 431/2002 to monitor and manage the health impact of exposure to EMF emissions on the public and workers. The TRA's duty is also to ensure that telecom equipment does not cause any damage to the telecommunications network, safety and public health.

The TRA thus drafted the "Human EMF Exposure Limit" Regulation to set acceptable national limits for the level of EMF for the public and workers and protect them from potential health effects of man-made non-ionizing radio frequency in the living and working environment.

The "Human EMF exposure Limit" Regulation was issued for public consultation in October 2009. After having thoroughly taken in consideration stakeholders' feedback and especially those received from the Arab Spectrum Management Group (ASMG), the TRA Board Members approved the Human EMF exposure Limit Regulation on March 31st, 2010.

This Regulation will become binding after the State of Council's review and once published in the Official Gazette.

### **1.4.2 Issuing the Code of Practice for Value Added Services**

In line with its mission of protecting consumers' and ensuring that users have a clear understanding of their rights towards short numbers and Value Added Service (VAS) Providers, the TRA drafted the Code of Practice and issued it for public consultation in April 2009. This document protects consumers in relation to VAS and emphasizes the VAS Providers' responsibility in ensuring that the content, promotion and operation of all their Value Added Services (whether provided by themselves or by their Content Providers) comply with all conditions of this Code. The TRA has also created a thorough data



base of all VAS providers in Lebanon which it keeps up to date and refers to whenever a complaint arises.

After having thoroughly taken in consideration stakeholders' feedback, the TRA Board approved the Code of Practice for Value Added Services on March 29th, 2010. Several meetings sessions were also scheduled with the Ministry of Telecommunications (MOT) to further elaborate the Code and collect relevant feedback in order to create one final version to be sent to the State Council.

#### **1.4.3 Issuing the Spectrum RTU and Administrative Charges Draft Decree**

The TRA is mandated by Telecommunications Law No. 431/2002 (articles 5, 11 and 17) to present to the Minister of Telecommunications a draft decree defining the spectrum right to use fees and administrative charges.

In that regard, the TRA has finalized and submitted to the Minister of Telecommunications the following documents:

- The Spectrum Opinion (after taking into account stakeholders' feedback) along with the supportive documents used to analyze and derive spectrum pricing methodology and formulas; and
- A Draft Decree for setting Spectrum Radio Frequency Right to Use (RTU) fees and Spectrum Administrative Charges (SAC) and its rationale, to be reviewed by the Minister of Telecommunications and proposed to the Council of Ministers for issuance.

The above mentioned Draft Decree will replace the existing Decree No. 377 issued in 1989 with regards to the RTU fees to be charged for wireless services among which are the following services:

- Mobile and broadband Access Spectrum (in the 900MHz, 1800MHz, and 2.1GHz, 2.3GHz, 2.5GHz, 3.5GHz and 3.7GHz bands);
- Microwave Point to Point and Point to Multi-Point links (in the 1.4, 2, 4, 6, 7, 8, 10.5, 11, 13, 14, 15, 18, 22, 23, 25, 26, 28, 31, 38, 50, 52 and 55 GHz bands);
- Professional Mobile Radio (PMR) Spectrum (in the 138-144, 146-174, 230-380, 380.399.9, 406.1-430 and 440-470 MHz bands); and
- Other bands

This Draft Decree also defines the cost-based SAC charges that the TRA will perceive in return for monitoring and managing the spectrum assigned to Service Providers and Users, and thus ensuring them access to interference free spectrum.

#### **1.4.4 Updating the Numbering Regulation**

The Numbering Regulation is intended to establish the administrative arrangements covering changes to the National Numbering Plan, number assignments to operators, supplying numbers to customers, charging for numbers, and ensuring sufficient supplies of numbers. The Numbering Regulation is

designed to ensure that all licensed Service Providers are treated with objectivity, transparency and in a non-discriminatory manner.

The Numbering Regulation that was first issued in February 2009 was thoroughly reviewed in 2010, updated and finalized further to various discussions with the Ministry of Telecommunications (MOT) and TRA Board decisions.

#### **1.4.5 Updating the Rights of Way Decree**

In carrying out its duties, the TRA is committed to the principle of promoting the modernization of telecommunications equipment and networks in line with state-of-the-art technologies and regulatory principles.

Article 35 of the Lebanese Telecommunications Law contemplates that all licensed Service Providers will enjoy non-discriminatory access to public properties for use in connection with telecommunications infrastructure. Lebanon boasts an extensive public property portfolio that when made available will greatly reduce the costs to telecommunications Service Providers of building and operating modern telecommunications networks.

In this context, the TRA prepared a study on the Use of Public Property in 2009 examining the anticipated needs for access to public properties faced by Service Providers, and dealing with various legal matters relating to State and municipal authorizations generally. This document proposes a methodology for the Charging of the Rights Of Way and the Use of Public Property by the licensed Service Providers.

On the basis of this study, various consultations were undertaken relevant government authorities (Ministry of Telecommunications (MOT), the Ministry of Public Works and Transport, the Ministry of Interior and Municipalities, the Ministry of Energy and Water, the Electricity of Lebanon, the public institution for water investment in Beirut and Mount Lebanon, in addition to the Council for Development and Reconstruction).

In 2010, the TRA updated the draft decree based on the feedback received from various stakeholders.

#### **1.4.6 Drafting the Radio Site Installation and Modification Guidelines**

In 2010, the TRA worked on drafting and finalizing the Radio Site Installation and Modification Guidelines. These guidelines identify the directives set by the Authority to install and modify radio sites for the purpose of using radio frequencies by the providers of public telecommunications services as well as earth television and radio broadcast services. This document includes the procedures for site inspection to check, audit and tag the equipment and its components installed in radio sites. It also encompasses the procedures for installation compliance checking and modifications as per the TRA standards.

These Guidelines will be implemented further to the application of the Type Approval Regulation and further to their review by the State Council.

## 1.5 Policy and technical studies

This year, the TRA conducted policy and technical studies in an effort to strengthen the regulatory framework. The TRA worked on various major projects that might impact the market dynamics and focused on telecommunications standards to be applied in Lebanon, Cybersecurity and Voice over IP.

### 1.5.1 Standards

As a member of the LIBNOR<sup>1</sup> JTC1<sup>2</sup> technical committee, the TRA members attended regular meetings to discuss and study more than 100 international standards - such as ISO/IEC 27K related to security standards- and participated in their adaptation to Lebanese standards. In 2010, the TRA efforts resulted in the adoption by LIBNOR of 4 main standards:

- ISO/IEC 27001 - the Information Security Management System (ISMS) certification standard;
- ISO/IEC 27002 - the code of practice for information security management with advice on a broad range of controls;
- ISO/IEC 27005 – the information security risk management; and
- ISO/IEC 27006 - the guide to the ISMS certification process for certification bodies.

In 2010, the TRA also focused its efforts on analyzing and updating the technical ICT standards that are acceptable in Lebanon, such as type approval and equipment related to Electro-magnetic radiation safety. In this regard, and further to exhaustive investigation, many of these standards have been adopted by the TRA and will be shortly presented to LIBNOR to be issued as Lebanese standards.

### 1.5.2 Cybersecurity

Cybersecurity consists of ensuring the security of and using, the ICT infrastructure and applications. Cybersecurity was considered as a major topic in 2010 and the TRA focused its efforts, along with other concerned stakeholders, on creating awareness on both the decision making and public levels

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<sup>1</sup> LIBNOR is a public institution attached to the Ministry of Industry. It was established by a [law dated 23/7/1962](#) as the sole authority to issue, publish and amend Lebanese standards and to give the right to use the Lebanese Conformity Mark (NL Mark).

<sup>2</sup> JTC 1 is the standards development environment where experts come together to develop worldwide **Information and Communication Technologies (ICT) standards for business and consumer applications**. Additionally, JTC 1 provides the standards approval environment for integrating diverse and complex ICT technologies.

while working on a Cybersecurity national strategy based on the ITU recommendations and international best practices.

The TRA first drafted a code of conduct that, once finalized and approved, will regulate the Internet Cafés business and will secure a safe place for users. I will also encourage all ISPs to provide parental control facilities to their end-users.

The TRA, along with the participation in various major Cybersecurity events, was a key active participant in the Cybersecurity Day event organized by the Pan Arab Observatory in Beirut, in December 2010, where it declared its intention to build the first national Emergency Cybersecurity Incident Response Center for Lebanon, in cooperation with Lebanese public institutions and the ITU. In that regard, the TRA conducted a detailed research the procedure to build the National Cyber Security Incident Response Centre and Team (Leb-NCSRC). This study reviews the legal basis that designates the TRA as the competent authority to lead this project, define the goals and the mandate of the center. This plan was adopted and is expected to be implemented during 2011.

### 1.5.3 GSR contribution

Similarly to last year's meeting held in Beirut, the GSR<sup>3</sup> 10th edition examined issues relating to the current regulatory challenges and gathered comments and contribution from around the world. The consultation in 2010 focused on identifying best practices in designing, building out and managing open access networks.

The TRA responded to the consultation sent by the GSR10 Chairman Mr. Ndongo Diao, Director General of the Regulatory Authority for Telecommunications and Post (ARTP) of Senegal and its contribution focused on the current challenges of open access networks, in the context of Next Generation Networks (NGN).

The TRA has identified several economic and regulatory issues to be considered in fine tuning the applications of open access to national broadband networks. These issues are being debated by regulators and economists around the world. However little consensus has been reached concerning the best regulatory practices that would achieve the intended policy objectives. These issues can be summarized as follows:

- The right balance between service competition and infrastructure competition;
- The challenge of access to public and private properties;
- The challenge of regulating public funded operations; and
- Network neutrality.

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<sup>3</sup> The 10th Global Symposium for Regulators (GSR10), organized by the Telecommunication Development Bureau (BDT) of the International Telecommunication Union (ITU), in collaboration with the Regulatory Authority for Telecommunications and Post (ARTP) of Senegal, was held this year in Dakar, Senegal on 10 – 12 November 2010

## 2. Managing scarce resources ■ ■ ■

In 2010, the TRA sought to systematize the management of the National Numbering Plan, the spectrum and band resources and instituting monitoring mechanisms to ensure compliance with international and national regulations.



### 2.1 Spectrum affairs

The TRA undertook main efforts to monitor the spectrum and resolve spectrum-related affairs on a range of issues. The latter include spectrum management and the permanent actions and follow-up of obstacles related to the efficient monitoring of spectrum.

In 2010, the TRA prepared a complete study with an overview of the spectrum in Lebanon. This document was presented to the Minister of Telecommunications and was used as a reference to perform further spectrum-related actions such as monitoring tasks and procedures, policy and regulations and database update and upgrade.

#### 2.1.1 Monitoring tasks and procedures

2010 marked the acquisition of a monitoring station allowing the effective management of spectrum. The TRA established a basic monitoring station at the Authority's premises to monitor the spectrum bands up to 3.3 GHz with emphasis on the FM and civil aviation bands. 2010 was also marked by exhaustive monitoring and inspection activities to put an end to violations and interferences. The TRA followed up on daily basis on various claims received from telecom operators, broadcasters and sent subsequent Notice of Violation to the concerned parties to resolve the issues.

- **Monitoring system:** this monitoring system is composed of a Spectrum Analyzer and a general coverage receiver, modulation meter and roof mounted Omni-directional wideband antenna;
- **FM field monitoring:** the TRA spectrum team performed daily monitoring and field inspection on the FM band to ensure compliance of emission and to protect the aeronautical band from harmonics and inter-modulation causing interference on this band;
- **Solving interference problems:** regular field inspections were also performed on the 2.3 GHz and GSM band to detect intruders, resolve complaints received from various operators and clients, assess QoS and eliminate sources of interference caused by GSM repeaters and jammers and other sources;
- **Reducing the EMF transmission:** field measurement and site inspection were undertaken while aiming at reducing the EMF generated by telecom equipment and transmission sites in accordance with the standards defined by the TRA in the "Human EMF Exposure Limit Regulation";
- **Cooperating with the General Directorate of the Civil Aviation:** on October 1st, 2010 the TRA spectrum team located a missing buoy after having received a request for a technical assistance from the Meteorology department at the General directorate of the Civil Aviation. This buoy containing sensitive electronic devices has the function of constantly updating the observational

meteorological department at the General Directorate of the Civil Aviation with important meteorology data. It was lost since December 2009 further to a storm; and

- **Stopping illegal transmission:** the TRA also worked on stopping illegal transmission in many areas and confiscated related equipment in cooperation with ISF Cyber Crime and Intellectual Property Bureau.

### 2.1.2 Spectrum policy & regulations

The TRA dedicated lots of efforts in 2010 on fairly dealing with various spectrum issues such as for example the legal and fair re-distribution of frequencies while fulfilling the needs of the private and public sectors, spectrum planning and management, in addition to the development and modernization of the spectrum regulatory framework.

- **Dealing with illegal Service Providers:** in line with its mission mandated by Law 431/2002, the TRA concentrated its efforts in 2010 on finding a viable solution to stop illegal operators that highly affect the structure and dynamics of the telecommunications sector in Lebanon. A preliminary policy and regulatory framework proposal titled “Comprehensive Approach to Deal with Illegal Operators and Businesses” was prepared and approved by the Board and discussed with the Minister of Telecommunications;
- **Improving FM Broadcasting draft document:** furthermore a study of new FM master plan based on feedback received from concerned stakeholders on the consultation launched by the TRA in 2009 on the subject was also initiated while aiming at finalizing it in 2011;
- **Spectrum assignment:** further to the essential technical analysis (interference analysis, availability, hi/low violation...) and frequency planning for microwave frequency bands undertaken by the spectrum team, the TRA performed various frequency assignments such as for example for Internal Security Forces (ISF), for EDL for their private fixed microwave network as well as for Service Providers for their backbone and access backhauling ; and
- **Analogue-to-Digital TV Migration Plan:** on the other hand, the TRA worked on the Analogue-to-Digital TV Migration Plan by defining the work plan with relevant administrations and the timetable for migration from analogue to digital. In this context, the TRA reviewed the applicable laws and regulations to develop the plan in line with Law 431 and the digital broadcast evolution. The TRA presented the work plan and preliminary budget for this project to the Minister of Information and Minister of Telecommunications in order to coordinate with concerned ministries in due time. A committee will be formed to prepare the final plan and follow-up on the implementation process.

### 2.1.3 Spectrum database

In an effort to keep relevant crucial spectrum information updated, the TRA regularly followed-up with operators (Broadcasters, Operators, Satellite Operators) to gather and correct erroneous data and initiate the process of re-organizing the used frequencies and channel plans.

The TRA sought to systemize the information collection by training FM broadcasters on data gathering. The TRA invited the FM broadcasters to attend a technical workshop on Thursday, August 19, at the Authority premises. The purpose of the workshop was to explain and clarify the technical parameters requested in the RFI to build effective database, which is a key element for an efficient spectrum management and monitoring.

### 2.1.4 Preparing for WRC12

In 2010, the TRA spectrum team participated in various ITU Study Groups and ITU activities related to radio communication sector and specifically on the World Radio communications Conference (WRC12) to be held in Geneva in 2012 preparation that consisted of:

- Preparing the preliminary official positions for Lebanon and following up with regional organizations on the WRC12 Agenda Items; and
- Following-up on the activities undertaken by the Arab group for all matters related to spectrum management, the preparation for WRC12 and presenting the Lebanese contributions with an updated report on CPM chapter 2 to the 14<sup>th</sup> ASMG meeting held in Beirut.

## 2.2 Numbering

The TRA is mandated to establish and manage the numbering needs of consumers of public telecommunications services. In May 2009, the TRA finalized a new National Numbering Plan (NNP) and updated Numbering Regulation after having consulted with concerned entities in the private and public sectors. In 2010, the TRA reviewed and finalized the National Numbering Plan (NNP) further to various consultations with the Ministry of Telecommunications (MOT) and to TRA Board decisions. The team also prepared the RFP specifications for a numbering tool management system based on the Numbering Regulation and the new NNP.

The TRA addressed the urgent need for new mobile numbers through letters, decisions and several meetings with the Ministry of Telecommunications (MOT) about the implementation on the NNP and the need for new mobile numbers for MIC1 and MIC2. It was concluded eventually that a new code, 76, would be opened, which provides 1 million mobile numbers to be allocated equally to meet MIC1 and MIC2 needs with minimal costs and changes to the existing network arrangements.

### 3. Protecting Consumers ■ ■ ■

Protecting consumers' rights forms one of the most crucial responsibilities of the TRA. The Authority works towards ensuring telecom users rights protection, the respect of consumers' personal information, their right to information, their right to submit their complaints and finding a fair solution in a timely manner and other rights defined in the TRA issued regulations.

In 2010, the TRA has been concentrating its efforts on several fronts towards consumer protection despite the publication delay of all related regulations in the Official gazette.

On the regulatory side, the TRA sought to apply the regulations related to consumer protection in cooperation with concerned telecom Service Providers and Value Added Service Providers.

On the field level, the TRA focused this year on solving consumers' complaints and promoting awareness based on its already issued regulations and in light of its mission to achieve high transparency among its consumers.



#### 3.1 Updating regulations and laws

The Authority is concerned about protecting consumers and ensuring the respect of their personal information. This year, the TRA considered consumer protection as a priority and approved in March 2010, two main regulations that directly impact consumers: **"The Code of Practice for Value Added Services"** and **"the Human EMF Exposure Limit Regulation"**.

- **Issuing the Code of Practice for Value Added Services:** the Code of Practice for Value Added Services was issued for public consultation in April 2009 with a deadline to consult by June 2009. After having thoroughly taken in consideration stakeholders' feedback, TRA Board Members approved the Code of Practice for Value Added Services on March, 2010. This Code will become binding further to the State of Council's review and once published in the Official Gazette.  
This code will protect consumers in relation to Value Added Services and will emphasize the Value Added Services Providers' responsibility in ensuring that the content, promotion and operation of all their Value Added Services (whether provided by themselves or by their Content Providers) comply with all conditions of this Code.
- **Issuing the Human Exposure Limit draft regulation:** the Human EMF exposure Limit Regulation was issued for public consultation in October 2009 with a consultation deadline of December 2009. Taking in consideration stakeholders' feedback, TRA Board Members approved the Human EMF exposure Limit Regulation on March 31st, 2010. This Regulation will become binding further to the State of Council's review and once published in the Official Gazette.



The purpose of this Regulation is to set national limits for the level of EMF exposure that is considered acceptable for the public and workers to protect them from potential health effects of man-made non-ionizing radio frequency in the living and working environment.

These 2 regulations, along with the “Consumer Affairs Regulation” that was approved back in 2009 by the TRA Board, were forwarded to the Minister of Telecommunications with whom meetings and presentations were coordinated, in order to issue one final version for each document that will become binding further to the State of Council’s review and once published in the Official Gazette.

### **3.2 Resolving complaints**

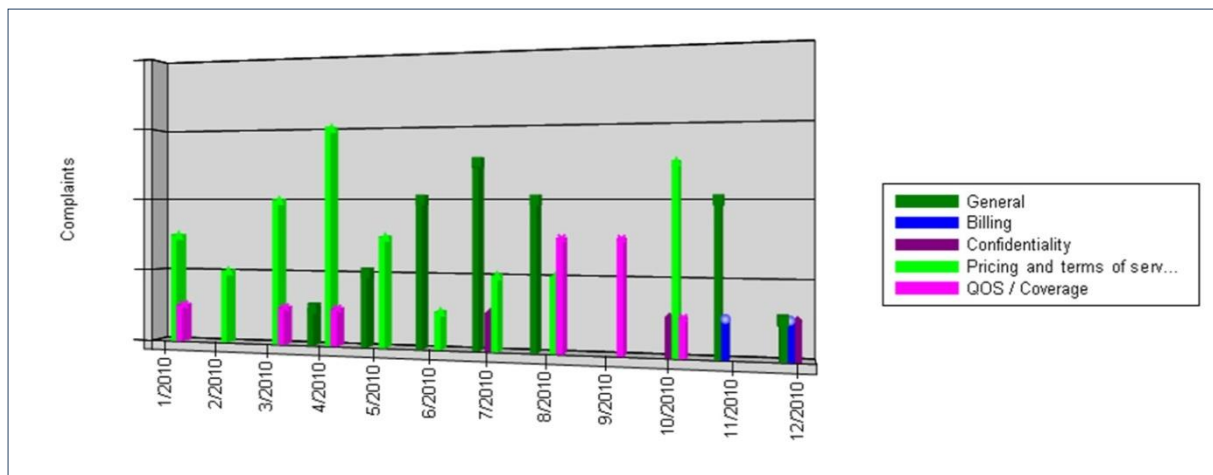
The Consumer Affairs Regulation (CAR), which was approved by the TRA Board in 2009 clearly defines telecommunications consumers’ rights and their right to complain. The CAR also sets out a clear procedure for the submission of complaints firstly to Service Providers and secondly to the TRA in case the service provider failed to deal with the complaint in a timely and satisfactory manner.

Consumers were able to submit their complaints to the TRA through the 1739 Consumer Protection Directorate (CPD) hotline at the Ministry of Economy and Trade (MoET), with whom an MOU was signed in 2009. In 2010, the TRA received more than 100 complaints mainly revolving around the invasion of confidentiality, false or no price announcements of Value Added Services, breaking the terms of services, bad quality of service, false billing and delays.

The TRA has successfully resolved more than 95% of the complaints received in 2010 to the benefit of consumers while protecting their rights, which resulted for example in:

- Improvement of the mobile quality of service in some regions in Lebanon where complaints were received. The bad quality of service resulted from the existence of illegal equipment causing interference on mobile networks. This equipment was located and confiscated by the TRA;
- VAS providers refunding consumers for the lack of price announcements and giving their formal promises to abide by the Code of Practice for VAS;
- Mobile Operators blocking spammers by coordinating with international operators; and
- Internet Service Providers resolving broadband DSL installation delays and sending clarifications to their customers regarding the different offered packages.

As such, in August 2010, the MOET praised the consumer affairs efforts and complaints solving efficiency of the TRA.



Number of received complaints in 2010 by type

### 3.3 Protecting children in cyberspace

The TRA considers children's protection a critical component of developing a knowledge society and aims at raising awareness about the challenges related to ensuring the security of children online as part of its efforts to protect consumers of telecommunications services.

Children are vulnerable in cyberspace, where they may be targets of pedophiles, cyber bandits, hackers, and online predators. In that regard, the TRA has taken steps to promote children's online protection in 2010 through:

- The development and constant update of a specific section on the TRA official website offering exhaustive practical information on children's protection;
- Effective contribution within the various committees of the Higher Council for Childhood Protection, the TRA worked on a code of conduct for ISP's and Internet Cafés in order to ensure the safest environment on the Internet; and
- Active participation, contribution and presentations in numerous local and international conferences such as for example "Creating a National Consensus for Online Safety", "INET" and "Leaders in ICT" conferences.

### 3.4 Informing consumers

The TRA works on creating consumer rights awareness through various vehicles such as the publication of exhaustive information on the TRA website, intense press coverage, the organization of meetings and the participation in various local and international conferences and workshops.

#### **Consumer protection brochure:**

As part of its efforts to improve consumer awareness about their rights, the TRA published in 2010 a new leaflet focusing on its consumer protection related efforts at the regulatory and field levels within the mandate assigned to it by Law to help telecom services consumers secure their rights. The leaflet highlights the TRA objectives and main actions to develop the telecommunications sector in Lebanon

such and improve the quality of telecom services, decrease the prices of telecommunications services and create awareness around the procedure for users to present complaints on the 1739 hotline. This consumer protection leaflet is part of a project funded by USAID and managed by AMIDEAST to enhance the TRA awareness.

This leaflet will be distributed at the customer service centers of major telecom Service Providers such as Mobile Operators, various Internet and Data Service Providers (ISPs) as well as the Consumer Protection Directorate at the Ministry of Economy and Trade and the TRA as of the beginning of 2011.

### ***Website***

The TRA has dedicated a specific section to consumers on its official website allowing them to obtain further information about their rights.

This section contains exhaustive, simple and useful information destined to consumers of telecommunications services such as for example:

- Definitions of telecom terms;
- A glossary in English and Arabic in English and Arabic;
- A directory of existing Lebanese licensed Service Providers with their contacts;
- A simple step by step complaints filing and resolution section; and
- Current telecom services offers and tariffs.

Numerous other sections contain exhaustive information related consumers' rights in general and to online children protection in particular.

### ***Coordination with concerned stakeholders***

The TRA took various initiatives to coordinate consumer affairs with concerned stakeholders through meetings, correspondence and follow-up. Two examples can be related below.

The TRA Board held an informal meeting with consumer protection agencies, NGOs, major telecom stakeholders and TRA experts in May at the TRA premises to discuss the latest developments and TRA actions in protecting Lebanese consumers of telecommunications services. Several topics were openly discussed and more particularly the TRA related regulations, the effectiveness of the 1739 hotline that handles consumer's complaints and the TRA actions towards children online protection and the support towards disabled. The meeting opened the floor to many interesting discussions with the invitees to better understand their needs.

In July 2010, the TRA sent circulars to all licensed Lebanese ISPs requesting from them to take the necessary measures to clearly mention in their published offers a transparent products descriptions. Telecom users being mainly unaware of the technical matters related telecom services; this action will help put limits to consumers' abuse.

***Participation in local and international conferences and workshops:***

The TRA also actively participated in several local and international conferences and workshops tackling consumer affairs and presented about major topics relating to consumer rights and protection.



### III- BUILDING CAPACITIES AND BRIDGES ■ ■ ■

The TRA focused in 2010 on empowering Lebanon and building its internal and external capacity by capitalizing on its existing human resources while working with limited financial means. Nevertheless, the TRA was able to strengthen its relations with local, regional and international organizations and entities through participation in conferences and workshops and the signing of Memorandum Of Understanding with Authorities having similar competencies.

The TRA was also able to streamline its interaction schemes with internal and external stakeholders by organizing conferences and workshops and by holding consultative and informative meetings with its partners.

#### 1. Empowering Lebanon ■ ■ ■

The TRA is committed to empower Lebanon and strives to support the country's telecommunications sector and equip the country with state of the art tools. This equipment will allow efficient spectrum management, the enhancement of telecom services quality of service as well as the type approval procedures transfer from the Ministry of Telecommunications (MOT) to the TRA and its optimal management.



#### 1.1 Supporting Lebanon's Telecommunications Sector

In October 2010 the TRA, as part of the Lebanese delegation who participated in the ITU Plenipotentiary Conference -the top policy-making body of the ITU-, achieved a major milestone towards supporting Lebanon's telecommunications sector by negotiating the condemn of the Israeli enemy further to the massive destructions of the Lebanese telecommunications infrastructure that resulted from various wars. Based on the UN resolution 159 of 2006, the Lebanese delegation Headed by the Minister of Telecom for the first part and by Dr. Imad Hoballah, TRA Acting Chairman and CEO, for most of the Conference, with active participation of Senior Spectrum Management Expert, Mohamad Ayoub, secured the "condemnation of all attacks and violations by any ITU Member State against telecommunication networks in any other Member States which harm the latter's national security, inter alia, those perpetrated by Israel toward Lebanon" (Res 173). The Lebanese delegation also obtained:

- The vote of a new resolution: **RESOLUTION 173**: "Piracy and attacks against fixed and cellular telephone networks in Lebanon".
- The reiteration of two major resolutions for the telecommunications infrastructure development:
  - **RESOLUTION 34** (Rev. Guadalajara, 2010): "Assistance and support to countries in special need for rebuilding their telecommunication sector"; and
  - **RESOLUTION 159** (Rev. Guadalajara, 2010): "Assistance and support to Lebanon for rebuilding its telecommunication networks (fixed and mobile)".

## 1.2 Providing Lebanon with best in-class equipment

The TRA strives to equip the country with high standards equipment and software to measure and monitor the spectrum, quality of service indicators and efficiently organize the type approval.

### ***SMMS-LB Project***

In February 2009, the Authority and the United States Agency for International Development (USAID) signed a memorandum of understanding granting the TRA \$3M to fund the procurement of spectrum management equipment and the requisite technical assistance and training.

The Spectrum Management and Measurement System (SMMS) allows the TRA to efficiently manage the spectrum, establish rules for its use, identify entities exploiting frequencies, define spectrum occupancy, and track sources of interference. The system will lead to better license protection from any interference and unauthorized use.

In 2010, the Spectrum team at the TRA reviewed the SMMS-LB Design with concerned parties and awarded vendors in order to adjust the proposed design to fit the TRA requirements and finalize the bill of suppliers (BOS), implementation plan, workflow and time table. The TRA also followed-up with MOT to use available sites as fixed monitoring stations and with Ministry of Finance on approval of TVA waiver.

### ***Quality of service Monitoring and Measurement System***

The Quality of Service (QoS) Monitoring and Measurement System (QoS MMS) will allow the Authority to oversee and follow-up on the performance of every type of fixed and mobile broadcast in every region of Lebanon and take the necessary actions to improve the quality of service.

To that effect, the TRA launched an international request for proposal (RFP) in 2009 for the purchase and maintenance of this equipment and selected the best in-class provider at the end of the process.

The QoS MMS is based on a state of the art data measurement and processing system that collects and processes raw data in provenance from mobile (GSM, 3G, HSPA, WiMax,...), fixed (PSTN, IN, ...) and data networks (Wireless, Wi-Fi,...) platforms. It is used to:

- Measure the performance of telecommunications and data networks;
- Measure the real time quality of internet services (including broadband Internet services) provided by ISPs to end users;
- Analyze the traffic; and
- Deliver reports on key performance indicators on fixed-line, wireless and data networks.

In 2010, the TRA finalized the system purchase agreement and has planned the necessary budget to purchase it after getting the required funds in 2011.

In 2010, Tunisia has conducted a pilot project using a similar system to measure broadband Internet from end-user perspective. The TRA has discussed the results with the team who conducted this

project to benefit from their recommendations and findings and draft the optimal configuration that should be applied in Lebanon.

The TRA has also acquired a state of the art drive test tool and intends to conduct drive tests to measure the quality of mobile services in 2011 and publish subsequent results.

### ***Type approval application***

In 2009, the TRA had launched the development of the Type Approval online application that aims at facilitating the processing and the follow-up of all applications related to type approval requests. In 2010, various tests and updates were developed on the application that will be activated further to the type approval prerogatives transfer from the Ministry of Telecommunications (MOT) to the TRA.

The TRA has secured funds from the European Union to purchase the equipment destined to produce the Type Approval holographic label. Subsequently, the TRA has received in December 2010 two professional, industrial-grade thermal printers dedicated for printing the TRA approval logo as well as around 70,000 secured holograms that will be applied further to the type approval prerogatives transfer.

### **1.3 Coordinating with local, regional and international organizations**

In 2010, the TRA coordinated with various local public institutions as well as with regional and international organizations in line with its objectives of empowering Lebanon with best in-class regulations, showcasing the country on the international scene and sharing expertise and knowledge with other institutions.

#### ***MoU with the Ministry of Defense***

The TRA and the Ministry of Defense (MoD) signed a Memorandum of Understanding (MOU), approved by H.E. Minister Elias al-Murr on February 8, 2010 that defines the coordination procedure related to the importation and approval of Telecom equipment.

A Type Approval database was developed by the TRA to facilitate the coordination with MoD, to gather information related to the importation license and equipment specifications, and enable the MOD to access this information to provide an opinion within a limited time frame set by the Authority. This MOU, also defines the coordination procedure related to the spectrum and frequency allocation.

#### ***World Bank***

In September 26, 2010 the TRA was invited to participate in the Technical Meeting of Regulators of the MENA, a meeting organized by the World Bank in Cairo where the **Middle-East and North Africa Infrastructure Regulatory Forum** was created.

The objectives of the forum are to foster cooperation among infrastructure Regulators in MENA countries, enhance regulatory decision-making, promote best practice, exchange of information and

experience-sharing among infrastructure regulators. The forum will also facilitate the development of training and capacity development opportunities for infrastructure regulators.

The Forum is open to all autonomous regulatory bodies and Ministry/Government departments performing regulatory functions that are based in countries of the MENA region and that operate in various infrastructure sectors such as telecommunications, energy and electricity, water and sanitation, transportation, etc...

A Regional Steering Group was established to take the process forward in collaboration with the World Bank. The Steering Group is composed of representatives of Regulatory Authorities of KSA, Algeria, Egypt, Morocco and Lebanon, represented by Dr. Imad Hoballah, Acting Chairman and CEO of the TRA.

### **EMERG**

Representatives from regulators member of the Euro-Mediterranean Regulators Group (EMERG)<sup>4</sup> met in Rabat in January 2010 in the framework on the annual plenary session. The objectives of this meeting were to discuss the level of commitment of each country, recap year 2009 and plan for the activities of 2010.

After the appointment of a new European consultant within the NATP-3<sup>5</sup> program to follow-up on the EMERG progress, an extensive benchmarking exercise has been undertaken. The results of the benchmarking were used to assess the divergences between regulatory approaches that need harmonization as well as the similar challenges currently faced by regulators and that need joining forces and EMERG support.

Throughout the year, the TRA follows-up with other members of the EMERG for the organization of workshops ensuring a continuous participation as well as an active contribution of TRA in these events.

On December 14<sup>th</sup> and 15<sup>th</sup>, most of the EMERG Member Authorities attended the annual benchmark meeting that took place in Rome. The Contact Network meets once a year to assess the progress of EMERG and the work undertaken in 2010. During this meeting, representatives from member countries revise the benchmark exercise undertaken for 2010 and prepare the workshops' planning for 2011. The agenda of the plenary meeting was also discussed and finalized.

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<sup>4</sup> EMERG is the Euro-Mediterranean network for Regulators, which the TRA is member of since 2008. This network aims at strengthening the co-operation between Euro-Mediterranean Telecommunications Regulatory Authorities in the region, share knowledge and best-practices.

<sup>5</sup> NATP 3: New Approaches to Telecommunications Policy (NATP) is a project within EMERG which objective is to get the international cooperation between national regulatory authorities up and running, so that the region will be geared to helping itself in a sustainable way



## **AREGNET**

### **a- AREGNET Plenary meeting and Quality of Service study**

Members of the Arab Regulators Network (AREGNET) met in Sudan to present and discuss the 2009 achievements, to transfer the presidency of the Network from CITC – Kingdom of Saudi Arabia to the TRA of Sudan and to set new targets for year 2011.

The TRA of Lebanon, represented by Mrs. Carole Hage, Senior Expert at the TRA, participated in the AREGNET plenary meeting on 23 June 2010 and engaged in producing an updated study on Regulating the Quality of Service. The aim of this study is to share the experience acquired by the members in this field during the past few years, to set common grounds for Quality of Service Indicators (types and values) and to set best practices for:

- Measuring and controlling the quality of service offered by Service Providers;
- Facing breaches in the quality of services; and
- Dealing with false information provided by the operators

The TRA closely worked with AREGNET on the QoS project, as part of cooperating with the Arab countries, exchanging expertise about the implementation of the QoS Regulation, and developing a framework that demonstrates how to deal with the QoS provided by the telecommunication Service Providers in the Arab World. In that regard, the QoS team at the TRA has prepared a detailed questionnaire and distributed it among the Arab telecom Authorities. Most of the Arab authorities have replied to the questionnaire and the TRA QoS team is currently assessing the answers in order to draft the final report and raise it to AREGNET Members before their next meeting in April 2011.

### **b- AREGNET broadband in Arab countries study:**

Egypt's NTRA has engaged in conducting a study on broadband in Arab countries for AREGNET.

The TRA of Lebanon has gathered data and recommendations for the study and participated in the workshop that was held in Sharm el Sheikh on 20 April 2010. The aim of the workshop was to discuss the recommendations and concerns of the members of the Network, to reach a common understanding of the Broadband market indicators and to agree on the components of the final report.

The study covered:

- Setting the definitions of broadband market indicators;
- Benchmarking of broadband indicators among the Arab countries (broadband penetration & affordability, PC penetration, and international bandwidth availability);
- Identifying the factors hindering broadband growth in Arab Countries; and
- Setting recommendations to improve the broadband sector in Arab countries.

**c- AREGNET retail price benchmark**

Further to the positive feedback provided by the Network members on the Arab Countries Retail Price Benchmark study, the TRA of Bahrain has commissioned the study to an international consulting firm on behalf of AREGNET.

This study covers four different types of telecoms services: Public Switched Telephone Networks (PSTN), mobile, leased line and broadband. A basket-based methodology was used to establish a comprehensive price comparison across Arab countries for each of these services.

The TRA has revised the collected data and the draft report generated by the consultant and submitted all necessary modifications and recommendations.

**d- AREGNET wholesale benchmark**

After having recognized the importance of the wholesale market and its impact on the telecommunications market in general, the TRA of Bahrain has commissioned the update of the Wholesale Regulatory Benchmark to another international consulting firm.

In 2010, the benchmark covered additional key regulatory issues such as licensing of Voice over IP (VoIP), mobile network and infrastructure sharing, scope of Universal Service Obligations (USO) and limits on foreign direct investment.

The TRA has contributed to this study by providing exhaustive and permanent information related to the regulatory framework applied in Lebanon.

***IPv6 Forum***

The Internet Protocol Version 6 (IPv6) Forum is a world-wide consortium of international Internet Service Providers (ISPs) and National Research & Education Networks (NRENs), with a mission to promote IPv6 by improving market and user awareness, creating a quality and secure New Generation Internet and allowing world-wide equitable access to knowledge and technology. The key focus of the IPv6 Forum today is to provide technical guidance for the deployment of IPv6.

IPv6 Forum Lebanon is a chapter of the IPv6 Forum dedicated to the advancement and propagation of IPv6 in Lebanon. Comprised of individual members, as opposed to corporate sponsors, its mission is to provide technical leadership and innovative thought for the successful integration of IPv6 into all facets of networking and telecommunications infrastructure, present and future.

IPv6 Forum welcomed Lebanon in 2010 as its newest member with the establishment of the IPv6 Forum Lebanon and the TRA, through its membership in the IPv6 Forum, will be playing an important role as a facilitator to IPv6 adoption in Lebanon.

***World Trade Organization***

The TRA coordinated efforts with the World Trade Organization (WTO) on type approval issues by participating in the meetings of the WTO/Technical Barriers to Trade (TBT) Enquiry Point. The type approval team at the TRA represented the Ministry of Telecommunication and the TRA of Lebanon in

this meeting. The aim of the TBT Enquiry Point is to provide information about the technical requirements, standards and the related conformity assessment procedures to be applied in Lebanon for optimal type approval management.

### ***ANACOM MoU***

In 2010, the TRA finalized the draft of a Memorandum of Understanding with ANACOM, the National Telecommunications Regulatory Authority of the Republic of Portugal. The primary purpose of the cooperation agreement between the two authorities is to create an informal platform for the exchange of information in regard of regulatory issues. Within the scope of this agreement, training programs, workshops and mutual consultations aiming at promoting the effective and high quality development of telecommunications services will be put in place among the two organizations.

The MoU is expected to be signed in early 2011.

### **1.4 Participating in international, regional and local events**

With the aim of empowering Lebanon to regain its leading role in telecommunications and to benefit from the experience and support of other countries and Authorities, the TRA attended a number of international and regional events.

#### ***Abu Dhabi Telecoms CEO summit- MECOM 2010***

Mrs. Mahassen Ajam, TRA Board Member and head of Information and Consumer Affairs unit, attended the Abu Dhabi MECOM 2010 Telecoms CEO summit conference in May 2010.

The summit focused on the telecommunications markets in the Middle East and North Africa and discussed their current economic environment, the future growth possibilities, the revenue opportunities, the financing of the telecommunications sector and the challenges of global expansion.

#### ***ITU Plenipotentiary Conference***

The Plenipotentiary Conference is the top policy-making body of the ITU. Held every four years, the Conference agreed on ITU's Strategic Plan 2012-2015, adopted the Financial Plan for the same period and elected the senior management team of the organization, the members of Council and the members of the Radio Regulations Board. The conference, which was hosted by Mexico's Ministry of Communications and Transport from 4 to 22<sup>nd</sup> October 2010, welcomed a total of 2,022 registered participants and observers from 167 ITU Member States, 42 Sector Members and observer organizations, including over 70 Ministers, 26 Deputy Ministers, and 35 ambassadors, making it the biggest event of its kind ever held in the city of Guadalajara.

Dr. Imad Hoballah, TRA Acting Chairman and CEO, held the position of vice chairman of the official Lebanese delegation while Minister Nahas was the Chairman for the first part of the conference, but headed the official Lebanese delegation for most of the time. Dr. Hoballah also headed the Lebanese delegation's technical committee who prepared and followed-up on the technical file that was presented at the ITU conference where Israel was sentenced of piracy and attacks against fixed and cellular telephone networks in Lebanon. Senior Spectrum Management Expert, Mohamad Ayoub was also an active member of the delegation.

### ***Telecommunications Law & Regulations in the Middle East 2010 conference***

The TRA strives to build synergies with various stakeholders in the telecommunications sector. In 2010, the TRA's legal and licensing unit has participated in many international conferences.

As part of this endeavor, the TRA's General Counsel, Elias R. Chedid, attended IBC Legal's 6th annual Telecommunications Law & Regulations in the Middle East 2010 conference in Dubai, United Arab Emirates.

This two-day conference, which took place in Dubai in October 2010 at the Hilton Dubai Jumeirah Resort, highlighted the most recent regional legal and regulatory developments, practical challenges, as well as current trends in the telecommunications sector.

Detailed analyses from reputed telecommunications lawyers and regulation experts were heard during the conference.

Hot issues such as the regulatory framework, the harmonization of regulatory practice, regulation best practices, dispute resolution, broadband, convergence, next generation networks, mobile content, harmonization, infrastructure sharing and licensing were discussed by experts of the field who came from the Middle East, Europe, the United States and Australia.

### ***2<sup>nd</sup> ITU Information Meeting on WRC-12 Preparation***

Members of the Telecommunications Technologies Unit at the TRA attended the 2<sup>nd</sup> ITU Information meeting held in Geneva, Switzerland on November 24-25, 2010. This meeting provided participants the opportunity to exchange views and have a better understanding of the preliminary draft common proposals and positions of the concerned entities regarding the WRC12 agenda items.

## **2. Building institutional capacities ■ ■ ■**

In its ongoing effort to build institutional capacity, the TRA focused in 2010 on training the staff to enhance knowledge sharing techniques and to provide them with updated information about cutting edge issues in the telecommunications industry. On the other hand, the TRA partnered with international organizations to acquire essential technical tools to streamline internal processes and to improve the Authority's ability to implement its regulatory agenda.



## **2.1 Capitalizing on existing human resources**

In 2010, the TRA developed the knowledge and skills of its team members and focused on knowledge sharing, internal and external training.

### **2.1.1 Knowledge sharing and internal trainings**

In 2010, the TRA developed a knowledge sharing procedure whereby all the material distributed within conferences and workshops is shared with all the staff and uploaded in a dedicated section on the TRA intranet. Also, reading material covering the latest regulatory, technical and general telecommunications issues is regularly shared with the TRA team members and documented electronically on the TRA Intranet and in an accessible library.

On the other hand, the TRA initiated an internal training cycle where TRA staff members present to the rest of the team a full training session covering a wide variety subjects that could benefit to the daily business or to the personal development of and knowledge of each TRA member. More than 10 presentations were given covering various subjects such as for example emotional intelligence, the next generation regulator, M-Commerce, mobile applications for e-health and e-education, the third generation regulator, etc...

Finally, in 2010, the TRA Board took the initiative to invest in a full day creativity seminar in August involving all the TRA team members and including a theoretical and practical part. The training focused on how to break habits and work smarter for a better efficiency.

### **2.1.2 External trainings**

The TRA believes that training is crucial for its human resources development. Despite the limited resources, the administration empowered existing staff members and capitalized on their potential given the funds at hand. Several staff and Board members participated in local, regional, and international training and learning activities tackling various topics.

#### ***United States Telecommunications Training Institute (USTTI) trainings***

The TRA staff participated throughout 2010 in different international trainings in the field of spectrum management and monitoring through the United States Telecommunications Training Institute (USTTI). These training sessions address the various elements required to plan, manage, and control an effective spectrum management agency, in addition to special sessions on engineering analysis, electromagnetic compatibility, spectrum measurements and monitoring, propagation, and technical standards.

#### ***13<sup>th</sup> Arab Spectrum Management Group***

The 13<sup>th</sup> ASMG was held in Tunisia in March 2010. The TRA was represented by Dr. Imad Hoballah, TRA Acting Chairman and CEO and Eng. Mohamad Ayoub, TRA Senior Spectrum Management Expert.

The objective of this meeting was to prepare for the next ITU Radiocommunications Conference (WRC-2012), review the reports related to spectrum management and coordinate efforts between the

Arab Group and other regional groups (European, the Americas and the Independent States). This conference also aimed at preparing the agenda for 14<sup>th</sup> ASMG meeting and determining its location and date. It was agreed during this meeting to host the 14<sup>th</sup> ASMG meeting in November 2010 in Beirut.

#### ***Workshop on Future of Fixed Networks***

The TRA participated in the EMERG workshop on the Future of Fixed Networks in Sharm el Sheikh in April 2010. This conference examined strategies to introduce competition in the fixed network sector, while taking into account the special position of the fixed network in many countries of the MENA region.

This position is different from that in most western European countries, where fixed line penetration rates have been traditionally high (although coming down in recent years). In the MENA region fixed networks have often not reached full coverage of the national territory and the penetration rates of the fixed sector that have actually been significantly surpassed by mobile, and currently decreasing. In this respect there may be similarities between the MENA countries and some eastern European countries. The objective of the workshop was to compare policies in various MENA and EU countries in order to introduce competition in the fixed network sector, and discuss with experts how the role of the fixed network is likely to develop and how this can be supported by regulation.

#### ***World Bank training for WTO negotiations***

The World Bank offered a course on financial, ICT and IT enabled services (ITeS) services trade for World Trade Organization (WTO) accession. The course took place in Vienna at the end of June-beginning of July 2010 and targeted concerned government departments, regional organizations, academic and research institutions and networks.

In addition, to the financial trade negotiations relevant in the context of the WTO, the training focused on the socio-economic impact of ITeS development, the emerging trends and the global opportunities in this field. World Bank representatives shed light also on the importance of ICT liberalization and regulatory challenges.

#### ***Workshop on SMP designation***

The TRA participated in the EMERG workshop on the Use of Significant Market Power as the Basis for Regulations. This workshop took place in Barcelona in July 2010. It aimed at shed lighting on the economic reasoning behind the concept of SMP based regulation as well as comparing SMP application in MENA and EU countries.

The workshop focused on the practical aspects of market reviews mainly tackling the methods and procedures adopted to collect data, the dominance factors defined and the remedies applied in various countries as well as specific challenges such as fixed-mobile substitution and wholesale regulation versus retail regulation were analyzed among participants.

#### ***Workshop on New Generation Networks and their impact on markets and regulation***

The TRA participated in the EMERG workshop on New Generation Networks and their impact on markets and regulation in Lisbon in September 2010. This workshop aimed at looking into the

regulatory approaches that are necessary to drive the broadband services penetration through the quick implementation of New Generation Access networks. The objective of the workshop was also to compare policies in various EU countries in order to best implement the EU directives and to spread knowledge among non EU countries within the EMERG group.

The main discussion was related to the introduction of the new EU directives on NGA and the different positions of EU countries and operators and mainly focused on:

- Encouraging competition in Next Generation Access and protect investment;
- Drive penetration in broadband as quick as possible; and
- Solve bottlenecks issues that will affect the quick roll-out of the service mainly the access to ducts and in-building wiring.

#### ***Next Generation Networks (NGN) Architecture, Networks and Services***

This workshop, held in Turkey in October 2010, focused on the technical perspective of Next Generation Networks (NGN). It covered ITU NGN standards and architectures as well as convergence of networks and services. In addition, it described NGN three layers model and the relationships of the layers. Moreover, it explained the transition steps to NGN (How to start the network and business transformation). Finally, the workshop illustrates a successful experience of NGN (Rural, Urban) transformation by covering whole regions of Turkey.

#### ***Quality of Services for Wireless Communication Systems Workshop***

On November 2010, the ITU/BDT (Telecommunications Development Bureau at the ITU) organized an Arab Regional Workshop quality of service measurement workshop in Hammamat (Tunisia), titled "Quality of Services for Wireless Communication Systems". Eng. Said Haidar, Quality of Service and Type Approval Senior Expert at the TRA, participated in this meeting where he had the opportunity to discuss with experts from different countries and industries various QoS issues and measurement techniques.

#### ***Interconnection Master Class (InterConnect Communications),***

The master class held in the United Kingdom in November 2010 covered technical, regulatory and commercial issues. Interconnection is considered to be at the very heart of developing an open, vibrant efficient, effective and competitive telecommunications sector. The Interconnection Master Class covers the following main areas:

- Interconnection Services;
- Reference Interconnection Offers (RIO) and Interconnection Agreements;
- IP and Next Generation Networks; and
- Local Loop Unbundling (LLU).

### ***Workshop on Universal Service Obligations and how to avoid market distortion***

The TRA participated in the EMERG Universal Service workshop held in Marrakesh, Morocco in November 2010. The workshop reviewed the new trends in Universal Service Obligations and the ways to avoid the distortion of the market. This workshop was particularly important with the advent of Next Generation Broadband networks and the new challenges of ensuring universal access to high speed broadband services. The main topics discussed were:

- The inclusion of broadband in the definition of Universal Service Obligations and the new directions discussed by the European Commission in dealing with broadband universal service;
- The Moroccan experience in designing an innovative universal service scheme and the Swiss approach to universal service obligations; and
- Costing and funding of universal service obligations and the demand side factor of universal service such as affordability of services.

### ***Forum on NGN and Broadband, opportunities and challenges***

The TRA participated in the ITU-D Regional Development Forum for the Arab Region on NGN and Broadband, Opportunities and Challenges in Cairo in December 2010.

The main discussion revolved around the involvement of ITU in different sectors and the introduction of the new NGN networks and their impact; in particular the workshop tackled the following topics:

- Regulatory and Policy issues related to NGN;
- Technical issues related to the migration from current generation to next generation networks, and testing models and labs for NGN services;
- Spectrum needs for Wireless NGA networks and the current debate on allocating new frequency bands; and
- ITU –T and ITU – D standardization activities in the NGN domain.

### ***Telecom Network cost modeling for the Arab states region***

Given the changes in technologies and their effect on the structure of Telecommunications and ICT sectors and since pricing and cost modeling practices are central to fair, competitive and healthy sectors, the Telecommunication Development Bureau (BDT) at the ITU organized a workshop titled 'Telecom Network Cost Modeling for the Arab States Region' in Damascus in July 2010.

The TRA was invited to attend this expert level training that was conducted by well-known international experts and focused on providing the participants (from the public and private sectors) with necessary theoretical background, international experience, and practical cases. This workshop allows stakeholders to acquire the necessary analysis skills to study the advantages and disadvantages of different cost models, including their implications for the calculations of cost based tariffs for regulated retail and wholesale services and the challenges of data collection.



## **2.2 Managing the budget and the financial resources**

Despite limited available resources, the TRA focused its efforts on fulfilling its mission and pursued in parallel its efforts in building the institution. The TRA worked on defining the budget for 2011 as part of its yearly recurrent projects, managing existing resources and on partnering international institutions to secure additional resources from, which will contribute to reduce the TRA expenses and finance capacity building projects while enhancing internal procedures.

### **2.2.1 Defining the TRA budget**

As stated by the Telecommunication Law 431/2002, the TRA prepared its budget for the year 2011 that reflected the expenses that shall be incurred by the different units to conduct their mission in addition to the financing of new equipment and other projects that the TRA is intending to implement in 2011 (such as monitoring the Quality of Service, Managing and monitoring the Spectrum, Type Approval and Consumer Affairs projects).

The TRA 2011 budget also included a government contribution from MoT and grants from the World Bank and USAID.

### **2.2.2 Cooperating with International Institutions**

The TRA partnered with international organizations, including the World Bank and the European Union, to fund capacity building projects. Through these projects, the TRA acquired essential technical monitoring tools and undertook training sessions to enhance internal processes.

#### ***World Bank Assistance Project***

The TRA signed an Agreement in 2009 with the World Bank by which the TRA is to receive a grant for an amount of \$492,300 from the World Bank's Institutional Development Fund (IDF). This grant will assist in the financing of the project titled "Telecommunications Regulatory Capacity Building" that will enable TRA to be a credible, efficient and responsive regulator for the Lebanese telecommunications sector.

In 2010, the TRA proceeded with the procurement of the first package of this project related to streamlining internal processes, strengthening external transparency and improving external communications with stakeholders. The TRA invited local and international firms to submit letters of interests to participate in the bid and detailed company profiles. After having reviewed the submitted information, the TRA shortlisted six firms as qualified to participate in the bid. The Terms of Reference (ToR) of the project and a draft Request for Proposal (RFP) were also completed during this year.

#### ***European Union Technical Assistance***

In its continuous effort to support the TRA, the European Union allocated an amount of 500,000 Euros for the purchase of technical equipment necessary for the implementation of the regulatory framework and undertaking of TRA duties.

The allocated budget covered the purchase of essential IT equipment (servers, PCs, web filtering solution ...), spectrum measurement tools, transportable direction finding system and a logo and label printing system.

The TRA, together and the Project Administration Office (PAO) of the PCM, prepared the Terms of Reference (ToR) for a Technical Assistance project funded by the European Commission in 2009 amounting €1.3 million. The purpose of this assistance was to provide the TRA with the appropriate key technical tools for the economic, technical and legal completion of the licensing of independent

operators of broadband services and to ensure the proper implementation of the extensive regulatory work prepared since its establishment.

The project covered six main components:

- **Liberalization of the broadband market:** development of a FTTx strategy, assistance in the broadband auction, implementation of the Rights of Way Decree, etc...;
- **Regulatory and policy framework:** implementing key regulations such as Infrastructure Sharing and Access to the Local Loop, drafting key regulations and policy notes related to Universal Service, Dispute Resolution, number portability, licensing of convergent services, illegal operators and other crucial regulatory guidelines;
- **Technical implementation of the regulatory framework:** broadcasting migration plan, licensing regulation for broadcasting, spectrum licensing, implementation of re-farming and numbering regulation, etc...;
- **Ensuring fair market competition:** comprehensive market analysis through determination of dominance, implementation of an observatory and benchmark process, market investigation and Retail Price control regime. Cost analysis is also included in this component;
- **Ensuring consumer protection and satisfaction:** creating a comprehensive telecommunications services booklet and enhancing the procedures to ensure protection of consumer rights; and
- **Raising awareness and enhancing communication:** developing the TRA marketing plan, establishing the communication strategy on liberalization and improving the media relations.

At the end of January 2010, 7 companies were pre-qualified and found eligible to submit offers. But only 3 companies submitted technical and financial offers in April 2010. The Winning Bidder has been notified within the timeline set by the EU procedures however the winning company failed to sign the contract on time.

The evaluation committee had to re-launch the process as part a negotiation procedure assessing the remaining offers received. Unfortunately, the time left for negotiation and completion of the credentials was extremely tight, and the deadline being non-extendable in any case, the entire process has been cancelled and the amount allocated to this project has been lost.

However and despite these circumstances, part of the available funds that were dedicated to various study tours allowing the TRA staff to gain knowledge and experience through in-house training sessions at several European regulators, were maintained.

### 3. Creating awareness ■ ■ ■

In 2010, the TRA used various vehicles to initiate dialogue with internal and external stakeholders, interact with them and keep them updated with the institution's projects and achievements. In 2010, several media initiatives were launched and communications vehicles varied from digital communication, to workshops and events organization as well as lecturing within the framework of local and international conferences. The TRA also dedicated efforts interact and coordinate its efforts with its stakeholders.



#### 3.1 Media

In 2010, the TRA took the initiative to communicate about its projects and decisions via the media to ensure greater awareness. More than 30 articles and press releases were dispatched to the local media and widely published.

Furthermore, journalists and reporters were invited to attend the events and conferences organized by the TRA to optimize the coverage and help reporters better understand the challenges related to each topic.

TV and radio interviews with TRA Board members and experts were broadcasted on several local and international TV and radio channels covering crucial topics such as TRA prerogatives its budget and financing, the regulatory and field work and achievements since the inception of the Authority, the major strategic projects that the TRA has been working on, the Lebanese telecommunications market needs and the ability of Service Providers to meet these needs as well as the relation between the TRA and the MoT, consumer protection issues and interference problems.

#### 3.2 Electronic communications

The TRA intensively uses its official website and the Intranet to widely communicate with the public about the institution's regulatory and field achievements. The TRA website and Intranet are regularly upgraded and updated daily to ensure a timely and accurate dispatch of information to the various TRA audiences.

##### 3.2.1 The TRA website

The TRA, adhering to its key values of independence, transparency, accountability and fairness, has focused on externally communicating its work and actions to the largest audience of investors, Service Providers and consumers. To best achieve such transparent communication, the TRA shares on its official website, all of its consultations, decisions, circulars, regulations, events, publications, News and important information with its stakeholders.

In 2010, the TRA website has successfully reached a state for providing an official gateway to all telecom stakeholders and extending the TRA's presence to the international market as well.

The TRA focused on the richness of the content, the ease of navigation, and the speed of the website. The content was produced in a consumer-oriented approach and positioned on the website in a way that is reachable from multiple locations.

The website showed visitors the latest website updates while reserving a major area for banners that focus on specific subjects such as marketing campaigns, consumer-oriented campaigns, and regulatory affairs in addition to regular sections update and creation such as:

- A new section has been dedicated to children protection offering popular tools for protecting and monitoring children in cyberspace;
- The "Offers and Tariffs" module is being updated frequently to reveal market tariffs. Market data is updated with new facts and figures;
- TRA press releases, speeches and presentations are being shared through the Info center
- The loading time of the pages has been enhanced for a better and faster navigation; and
- An advanced search engine was introduced in 2010 to ease the access to information by searching in the specifics of html content and electronic documents. This engine allows visitors to search within specific sections on the site during a specific time range while specifying the document types to be retrieved. The results are displayed in a tabular format specifying the title of the content, published date, category/section, and document type.

The continuous enhancements on the TRA website have successfully allowed the TRA to achieve prestigious web awards over three consecutive years in a row.



- In November 2008, the TRA has won **the bronze award** in 2008 Lebanon Web Awards under the International, Governmental and Non-Governmental Organizations category.



- In January 2010, the TRA has achieved **the silver prize** in 2009 Lebanon Web awards under Governmental Organizations category.

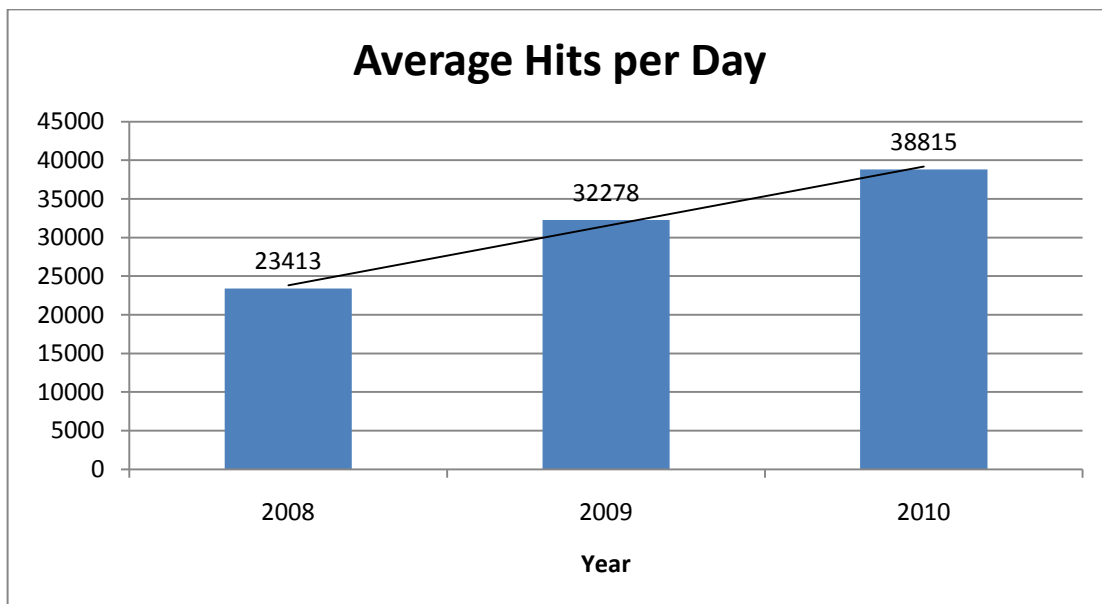


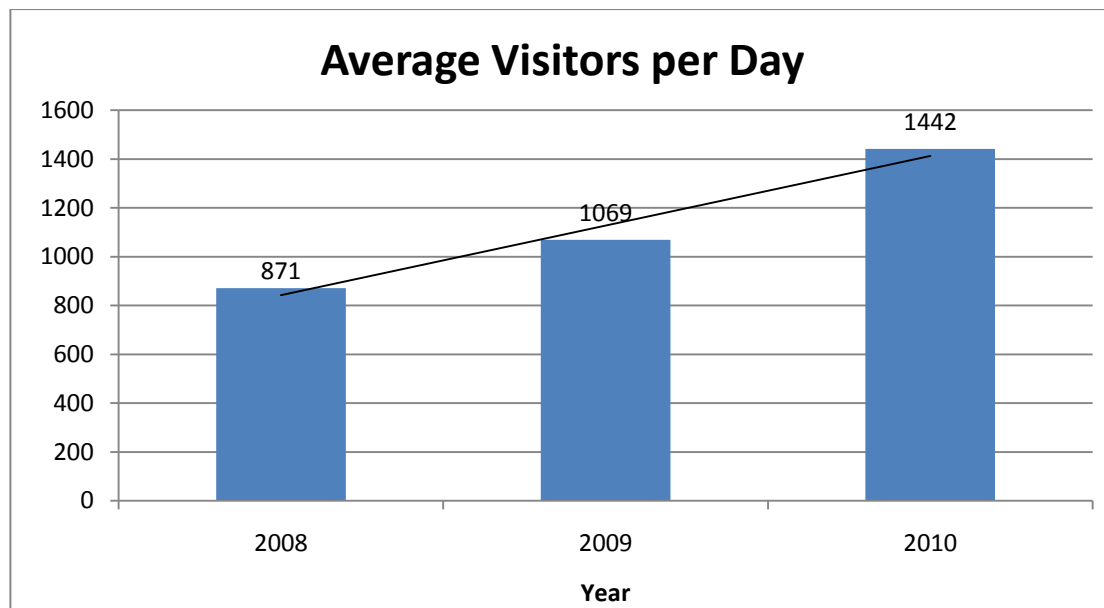
- In April 2010, the TRA has also won the **“Design Creativity” award** in the E-government Web Awards 2009 under the Public Authorities and Institutions Websites Category.



According to the website statistical reports, the comparison of 2010 web results with previous years shows a significant increase in the number of hits, visitors and views.

The below graphs give an overview of the website activities, illustrating the increase by 21% of the Average Hits per Day, by 13% of the Average Page Views per Day, and by 35% of the Average Visitors per Day between 2009 and 2010.





### 3.2.2 Internal Communications

Since 2008, the Intranet has been a rich platform for TRA staff internal knowledge communication. In 2010, the Intranet content has been vastly updated with over 100 reports, studies and presentations.

In addition to the Intranet, the TRA has also instituted internal communication mechanisms, such as Flash Info, to improve the circulation of information and updates among staff members. Since 2010, as an internal electronic weekly newsletter distributed via email, the TRA has released around 50 editions of the Flash Info newsletter covering the latest internal and external news including regulatory, management issues, training and social topics.

### 3.3 Organizing conferences and workshops

In line with the TRA's strategy for dialogue and public awareness, the team planned various events and workshops to include:

#### 3.3.1 Technical workshop for television and radio stations representatives

In light of its efforts to regulate and develop the spectrum, the Telecommunications Regulatory Authority held a workshop at its premises in Beirut Central District in August 2010 attracting representatives from 26 different television and radio stations. During the workshop, TRA's Spectrum Experts explained to the attendees the process of filling the request for information (RFI broadcasting) database required for the completion of their filing by the TRA.

This workshop took place within a series of actions related to the efforts of the Authority in the spectrum field and the coordination between the TRA and the concerned Ministries and other concerned public institutions. This workshop is also in relation with the follow-up on the decisions taken in the meeting between the TRA and the Ministry of Information in July 2010 and between the

TRA and the National Media Council beginning of August 2010 in order to find the appropriate solutions for interference problems.

### **3.3.2 EMERG conference on Independent Regulatory Authorities**

The TRA and the European Union hosted in October a Euro Mediterranean Regulators Group (EMERG) conference about the Independent Regulatory Authorities. This event was organized in recognition of the successful establishment of the TRA in Lebanon and in support of the plans of the Syrian and Palestinian Telecommunications Ministers to adopt a similar approach.

The first day of the conference featured an open session focusing on the “political” and economical aspects of the debate where the merits of independence, the new developments in the EU and the experiences in the region were tackled. This first session was marked by the participation of HE Dr. Charbel Nahas, Minister of Telecommunications of Lebanon, HE Mashhour Abou Daqqa Minister of Telecommunications and Information Technology of Palestine, the Chairman of EMERG Dr. Mountassir Billah from Morocco and the Vice-Chairman of BERECA Mr. Chris Fonteyn (the new EU institute of regulators). The Board and Commissioner of Lebanese TRA, Mr. Patrick Eid, Mrs. Cecile Abadie, Charge d’ Affaires at European Union in Lebanon, as well as the Board of the Regulatory Authorities participating in EMERG have actively participated to the debate. Representatives from the Industry, Civil Society and the Media were also invited to join in the debate.

The second day represented a closed group discussion among Euro-Mediterranean Regulators and high representatives from the Ministry of Telecommunications (MOT), the industry and the Lebanese academia. The independence of national regulatory authorities has been scrutinized through examples of Jordan and Austria before giving the floor to all members of EMERG to provide an insight of the financial and organizational structures of each authority. The last part of the discussion focused on the case of establishment and status of the TRA in Lebanon where different positions were presented and debated among participants.

### **3.3.3 The Arab Spectrum Management Group meeting**

The Telecommunications Regulatory Authority of Lebanon hosted and organized in coordination with the Arab League the 14th Arab Spectrum Management Group (ASMG) meeting that took place from the 29th of November till the 2nd of December, 2010, at the Metropolitan Palace Hotel.

The Arab Spectrum Management Group was established in 1997 by the Arab Ministerial Council for ICT to cooperate and collaborate in the field of Spectrum Management by sharing and exchanging views on the emerging radio communication aspects.

The ASMG holds annual meetings to negotiate the development of common Arab proposals for the agenda items of World Radio Conference (WRC) held every four years at the ITU.



The TRA of Lebanon worked extensively to organize the meeting as per international standards to ensure a smooth, organized and pleasant arrival and stay of all ASMG delegates in Lebanon.

The four-day meeting agenda started with an opening ceremony inaugurated by Eng. Mohamad Ayoub, TRA Senior Spectrum Management Expert, in the presence of the Minister of Telecommunications, HE. Mr. Charbel Nahas, the ASMG president Eng. Tarek Al Awadi, Mrs. Riham al Mit, Arab League representative, and the TRA Board, Dr. Imad Hoballah , Acting Chairman and CEO, Mrs. Mahassen Ajam, Commissioner and head of the Information and Consumer Affairs Unit, and Eng. Patrick Eid, Commissioner and head of the Market and Competition Unit. The opening ceremony also gathered a large number of spectrum management experts and consultants from the Arab countries and the media.

The 14th ASMG meeting was marked by the active participation of more than 200 high profile experts who discussed management and regulatory spectrum issues and prepared for the Arab positions on the different agenda items that will be presented at the ITU world Radio Conference in Geneva in 2012.

The meeting allowed the participants to review the structure of the upcoming Geneva conference as well as the coordination results with regional organizations. The fourth day of the conference witnessed the active participation of the Inter-American Telecommunication Commission (CITEL) (where Dr. Imad Hoballah, Acting Chairman and CEO represents the ASMG), the International Amateur Radio Union for Region 1 (IARU) as well as the manufacturers and operators concerned with the Agenda Items of WRC12.

The 14th ASMG also featured several social activities to allow participants enhance their networking, share knowledge and enjoy Lebanon. During the conference, coffee breaks and business lunches sponsored by local and international telecommunications companies provided opportunities for the participants to meet each other at the end of each panel and hence, to have side talks and discuss further the presented material. The TRA organized several guided tours the participants had the chance to visit Beirut's Central District and the touristic grotto of Jeita as well as a Gala dinner at the prestigious location of Pavillon Royal-BIEL as a closing to the event.







### 3.4 Lecturing at local and international conferences

The TRA highly qualified experts were solicited by various event organizers to lecture within local and international conferences to share their expertise with the audience. The TRA was able to secure various speaking slots and took this opportunity to communicate and build awareness about its prerogatives, projects and actions to develop the telecommunications market in Lebanon.

#### ***'The Future of Telecommunications in Lebanon' at AUT campus***

Dr. Kamal Shehadi gave a presentation titled "The Future of Telecommunications in Lebanon" at the American University of Technology (AUT) campus in Halate, in February 2010.

In his speech, Dr. Shehadi provided an overview of the Lebanese telecommunications market and highlighted the future of telecom liberalization in Lebanon by shedding light on its economic and fiscal impact associated with sector reforms (mainly mobile, fixed and broadband).

He also analyzed the different segments of the market and identified the bottlenecks preventing the Telecom sector in Lebanon from expanding, thus leaving Lebanon trailing behind its neighbors in almost all aspects of broadband networks and services.

Finally, Dr. Shehadi highlighted the broadband licensing plan proposed by the TRA to ensure fair and healthy competition in backbone high speed network, international gateway facilities, and access Networks and stressed on the importance of empowering the TRA to develop the Lebanese telecom market and ensure the highest benefits to all stakeholders.

#### ***The Turkish-Lebanese Economic Forum***

The Turkish-Lebanese Economic Forum was held in April 2010 under the patronage of Lebanese Prime Minister H.E Saad Hariri at the Movenpick Hotel and Resort Beirut where Dr. Kamal Shehadi participated as a speaker in the round table discussing economic cooperation and exchange of experiences.

### ***SAMENA's Beyond Connectivity***

SAMENA's "Beyond Connectivity 2010" conference took place in April 2010 in Beirut and focused on the current growth prospects and future opportunities as well as the challenges facing the telecom industry nowadays.

Organized by SAMENA Telecommunications Council, this year's event aimed at reviewing markets around the world and analyzing the pattern of growth, evolution, and innovation.

TRA's Senior Technical Operations Expert on behalf of Dr. Imad Hoballah, participated as a speaker in the "**Mobile Application Strategies**" round table and as a moderator in the **Next Generation Networks Regulatory and Policy Drivers** panel.

Topics that were tackled included e-health, e-Education, mobile Broadband Internet, mobile media and mobile health and education alongside regulatory policy issues linked to the deployment of next generation networks network and the role of the regulator in their implementation.

### ***ARABCOM***

ARABCOM, a regional yearly event gathering industry leaders was held this year in Beirut in May 2010. This year's conference examined Telecom developments, Investments, Regulations, Networks, Devices, Services, Applications, Security, Access, with particular relevance to the ARAB World market.

Dr. Imad Hoballah, gave a speech during the opening ceremony in which he announced that the TRA will persevere with its mission as an independent authority to liberalize and develop the telecommunications sector in Lebanon. He also stated that the TRA and the Ministry of Telecommunications (MOT) (MoT) have reached an agreement concerning important regulatory issues that revolve around:

1. Start the implementation of the "Quality of Service (QoS) and Key Performance Indicators (KPIs) Regulation", that was published in the Official Gazette (OG) on April 16, 2009, to cover all services. The priority of the implementation is as follows: Value Added Services, Mobile Services, Internet Services, Fixed Services, and other services;
2. Start the implementation of the "Consumer Affairs Regulation" and the "Code of Practice for Value Added Services Regulation" directly after sending them by the Minister of Telecommunications to the Shura Council and publishing them in the Official Gazette (OG). This will cover monitoring the performance of the mobile sector, the fixed-services sector, and the internet and broadband sector;
3. Transfer of responsibilities and authority of equipment Type Approval from the MoT to the TRA since the "Type Approval Regulation" was published in the Official Gazette (OG) on April 16, 2009; and
4. Start reviewing the Mobile Distribution Policy to combat the black market phenomena.

### ***LTE World Summit***

Members of the TRA Spectrum Affairs team attended the LTE World Summit that took place in Amsterdam in May 2010 and experts lectured on regulatory aspects of achieving flexible Spectrum Usage and Higher Channel Bandwidths using Channel Aggregation and Lebanon's TRA challenges to achieve harmonization of key bands, such as the re-farming project launched by the TRA in 2008.

### ***Lebanon business and investment summit***

The Lebanon Business and Investment Summit took place in September 2010 and gathered highly ranked government representatives and professional from various sectors being telecommunications, finance, transport or energy. The TRA, represented by its Acting Chairman and CEO, Dr. Imad Hoballah, participated in the panel related to infrastructure, Private Public Partnership (PPP), privatizations and concessions.

After having related a brief overview of the main indicators for the telecommunications market in Lebanon, Dr. Hoballah highlighted on the infrastructure needs and investments opportunities in each of the mobile, fixed, international and broadband markets. He presented also the international

experience in the financing of large infrastructure investments being government participation, PPP or private funding. Lastly, Dr. Hoballah clarified that such funding needs to be accompanied by regulatory and policy tools to ease the investments.

### ***FTTx conference for the MEGNA region***

TRA experts participated in the FTTx conference for the MEGNA region held in October 2010, in Dubai, that addressed the subject of "Laying the Foundations for Next Generation Fibre Networks & Ensuring Return on Investment". TRA experts gave a presentation titled "Regulator's perspective on fiber rollout – licensing considerations for the Lebanese market", which highlighted future fiber opportunities and plans in Lebanon, the drivers behind Lebanon's announcement of plans for fiber deployment, and the main considerations for Lebanon's deployment and the reasons behind each countries' roll-out uniqueness.

### ***Telecoms World Middle East 2010***

TRA experts attended and actively participated in the Telecoms World Middle East 2010 conference held in October 2010 in Dubai. TRA experts participated in the panel discussions on "Improving performance and profit margins through infrastructure sharing".

### ***INET***

The Internet Society (ISOC) organized INET in October 2010 in Beirut, reaching out to a wide spectrum of Internet users hailing mainly from Lebanon and focusing on doing business in the social networking era, content delivery networks (CDN) and child online safety.

Mrs. Corine Feghaly, TRA Senior Consumer Affairs Expert represented the TRA at INET, the first Internet Society conference in Lebanon and exposed the TRA actions on child safety on the Internet.

She also related the main regulations and laws in Lebanon and around the world revolving around this subject.

### ***US-ICT forum***

The American Embassy in Lebanon and the American-Lebanese Chamber of Commerce hosted the first annual US-Lebanon ICT Forum in October 2010 in Lebanon.

The forum gathered more than 60 active companies in the ICT sector and their latest products, and featured a series of seminars about trends in the technology and communications sector.

The TRA participated in one of the seminars and presented the broadband market in Lebanon from an infrastructure perspective. Mr. Patrick Eid, Board Member and Head of Market and Competition Unit, explained the importance of a reliable infrastructure as a booster for a healthy economy; he then gave an overview of the broadband market highlighting the position of Lebanon compared to regional and international markets in terms of penetration, prices, services... The needs for infrastructure, be it on the national transmission network or international capacity, were raised and the current projects undertaken by the Ministry of Telecommunications (MOT) were presented during his event.

### ***GITEX 2010***

The "GITEX Technology Week" is one of the largest and most important exhibitions in the world that tackles the information technology and communications sector and was held in October 2010 in Dubai.

Mrs. Mahassen Ajam, Board Member and Head of Information and Consumer Affairs Unit at the TRA, participated as a speaker in the "Consumer Protection" panel designated to highlight the importance of the role of regulators in protecting consumers and the steps and procedures that must be taken in this regard.

Mrs. Ajam highlighted the Authority's prerogatives by virtue of Telecom Law 431 in issuing the Consumer Affairs Regulation and the Code of Practice for value-added services and explained the reasons behind the hindrances of the implementation of these regulations. She also briefed the attendees about the cooperation between the Authority and the Ministry of Economy and Trade to share the 1739 hotline to receive telecom consumer complaints, and mentioned that the number of received complaints remains very low due to the lack of human and financial resources necessary to create awareness among consumers.

The panel also addressed the most important threats to consumers faced today, such as the invasion of privacy, the deterioration of the quality of service and the limited choices especially in the available market of fixed and mobile services.

### ***ICT Leaders in Beirut***

The Leader in ICT event was organized by the IIR Middle East in Beirut in November 2010. This event aimed at supporting the development and understanding across all stakeholders of a regulated competitive ICT market in the Levant region.

The conference revolved around the following main topics:

- The government policy to promote ICT growth as an important enabler for economic growth, modernization and competitiveness;
- The National Broadband Policies and more specifically France's achievement in implementing a competitive ubiquitous broadband communication services; and
- The challenges encountered from the wide availability of high speed broadband at affordable prices. The main challenges outlined during the conference were the spamming, fraud and child protection.

Several TRA experts and Board members had the chance to lecture about various topics and mainly:

- The correlation between the ICT and the telecommunications policy that was clarified by Mrs. Mahassen Ajam, TRA Board Member and Head of Information and Consumer Affairs Unit who participated in the first panel discussion where she also highlighted the vital importance of the TRA's role in building a solid regulatory framework to improve the ICT sector in Lebanon.
- The spectrum pricing policy and its legal background as defined in law 431/2002 discussed by Mr. Patrick Eid, TRA Board member and Head of Market and Competition Unit in the second session. He also stressed on the need to have a clear spectrum pricing to ensure optimization and waste reduction;
- The current outlook of the telecom sector in Lebanon in view of the ongoing infrastructure projects lead by the Ministry of Telecommunications (MOT) presented by Dr. Ali Krecht, Technical Operations Senior Expert at the TRA for who also highlighted the need to address various issues and adopt policy measures required for take-up of fixed and wireless broadband telecommunications services under a transparent and competitive licensing regime;
- The side effects of ICT on consumers and the Nation's security presented by Mr. Said Haidar, Quality of Service, Type Approval and Standards Senior expert. Mr. Haidar also explored all potential protection measures; and
- The TRA awareness efforts in terms of children protection in cyberspace explained by Mrs. Corine Feghaly, Consumer Affairs Senior Expert. Mrs. Feghaly also exposed the TRA's vision and potential regulatory measures to be contemplated in this regard.

### ***Child Online Protection conference***

The "Child Online Protection" conference organized by The Higher Council for Children Protection (HCCP) and Microsoft was held in Beirut under the patronage of H.E the Minister of Social Affairs Dr. Salim Sayegh in November 2010. The conference presented the dangers of the Internet and the solutions offered by Microsoft through protection dedicated software that can be used to ensure

children online protection. Discussions also evolved around the solutions to be taken at a National level to protect children from Internet dangers.

The TRA actively participated in this conference where Eng. Said Haidar led and represented Dr. Imad Hoballah at panel discussion titled “Technical framework to protect children online” where he participated in the discussions around the optimal solutions that ISPs can offer to contribute to the child online protection efforts.

Dr. Wafa Bou Diab, Quality Control Expert at the TRA, led the panel session titled “Towards Child-Friendly Cybercafés: License provisions and technical requirements” and gave a presentation titled “Towards Child-Friendly Internet Cafes” where she explained the risks that children are exposed to while using the Internet in cyber cafes. She also show-cased the example and efforts of other countries who regulated the cyber café business as well as the solutions that need to be implemented to protect children browsing the Internet in public places as well as the legal and regulatory measures to be taken.

#### ***FTTH Council Middle East Conference***

FTTH Council Middle East Conference held end November – beginning of December 2010 in Beirut.

Dr. Imad Hoballah, Acting Chairman and CEO of the TRA, gave a speech at the opening session of

the conference and emphasized on the importance of Broadband for the development of the National Economy and the TRA commitment to support, introduce, regulate and develop Broadband communications in Lebanon.

Dr. Hoballah also pointed out the TRA ongoing projects being undertaken in full coordination and cooperation with the MoT and that are destined to develop the sector in Lebanon such as the licensing and the equipment certification processes, the protection of consumers in addition to enhancing network security and ensuring these networks meet the required quality levels.

#### ***IEEE LCW 2010 workshop***

IEEE Communication Chapter in Lebanon organized a Workshop (IEEE-LCW'10) in December 2010 at the Lebanese University, in Beirut.

This year's workshop discussed Communications Security issues and focused on Cybercrime and Cyberwar, Network Security, and Mobile Cellular Security Evolution. Dr. Imad Hoballah, TRA acting Chairman, gave a speech during the opening ceremony and Eng. Mohamad Ayoub, Senior Spectrum Management Expert coordinated the plenary session.

### ***Arab Day for Safety and Security in Cyberspace conference***

The Arab Day for safety and security in Cyberspace was organized by the Antonine University in collaboration with the Arab Observatory for safety and protection in cyberspace and was held under the auspices of H.E the Lebanese Minister of Justice, Professor. Ibrahim Najjar.

The workshop was held in December 2010 at the Antonine University campus in Baabda, and was marked by the presence and participation of a number of Parliament Members as well as CEOs and general managers from the public and private sectors, representatives of the International Telecommunication Union and the Arab League in addition to a group of engineers and professors.

Dr. Hoballah participated in the first session, titled "The need for global cooperation where he delivered a speech titled "Policy and Strategy in the regulations to achieve protection and safety" in which he highlighted the risks of electronic networks misuse in the modern society and the possible ways to build an efficient national Cybersecurity strategy.

He also shed the light on the efforts of the "Regional Panarab Observatory for Safety and Security in cyberspace" to promote the culture of Cybersecurity, and highlighted the TRA efforts in considering a set of regulatory measures that can help secure the cyber space. On the other hand, he exposed the actual situation of Cybersecurity safety in Lebanon and proposed several recommendations to be considered by all the sectors to help put the country on the right track.

Eng. Said Haidar Senior Quality of Service Management Expert at the TRA, participated in the second day of the conference and gave a presentation within the fourth session titled: "Challenges of the

legislation related to communications ". In his presentation, Eng.Haidar declared that the current Lebanese efforts deployed to face the global threats of the cyber risks are insufficient. In this framework, he stressed on the TRA efforts and actions to confront these risks by participating in drafting the ICT and e-transaction law in addition to the technical efforts made in coordination and collaboration with the Ministries of Communications and defense to secure the protection of the communications networks infrastructure.

### **3.5 Interacting with stakeholders**

The TRA took initiatives to permanently interact with its stakeholders through the set-up of various meeting with concerned partners and correspondence efforts with stakeholders using the TRA official emails.

### 3.5.1 Meeting with stakeholders

In 2010, the TRA held several meetings with stakeholders to open the dialogue and listen to their concerns as well as to create awareness about the TRA projects.

Among the meetings that were organized in 2010 we can mention the Iftar held in August 2010 to honor the local media. A dialogue was open before the Iftar between the TRA Board and the media and evolved around the latest topics such as the requirements for the development of the telecommunications sector and broadband dissemination in Lebanon, the network security issues, the regulatory framework and field work that the TRA has been and is currently working on as well as latest achievements in terms of consumer protection.

In a constant effort for transparency and dialogue with its stakeholders the TRA invited in May 2010 consumer affairs representatives from various consumer protection agencies, NGOs and major telecom stakeholders to discuss the latest developments and TRA actions in protecting Lebanese consumers of telecommunications services. Also, in August 2010 the TRA Board invited DSPs and ISPs to participate in an open discussion at the TRA premises and discuss Telecommunications Network Security issues. Both meetings opened the floor to many interesting discussions with the invitees and helped the TRA better understand their needs.

The TRA Board also held various meetings with Lebanese government officials to coordinate efforts on various topics and spread awareness about the institution. This year was marked by several important step stone meetings and to name but a few, we can cite the following:

- The Minister of Telecommunications Eng. Charbel Nahas met the TRA Board in his office at the Ministry in May 2010. This first meeting, held after Dr. Kamal Shehadi's resignation, emphasized on strengthening the cooperation between the Ministry and the TRA in the application of law 431 to promote the Telecom sector;
- In July 2010, Prime Minister Hariri and the TRA Board met and discussed the current situation of Telecommunications in Lebanon and the required steps to boost the sector for the better of the Lebanese consumer, the private and sectors, and the Lebanese Economy. The TRA updated the Prime Minister on the level cooperation with the Minister of Telecommunications, H.E. Dr. Charbel Nahas, and on the recent agreements made between both parties about further implementations of Law 431/2001 and additional prerogatives to be assumed by the TRA shortly. In addition, the discussions included a summary of the TRA directive issued to the informing Telecom Companies operating in Lebanon to undertake all required measures to improve telecommunications network security and safety;
- The TRA Board examined interference problems and the related corrective measures as well as the future new channeling plans for the FM and TV broadcasting with the Minister of Information Mr. Tarek Mitri in July 2010. This meeting was also attended by the Minister of Telecommunications Eng. Charbel Nahas, the Telecommunications Regulatory Authority (TRA), the Director-General of the Ministry of Information, the representative of the National Audio Visual Media Council, the representative of the Directorate General of Civil Aviation, the



General Director of Television Liban as well as representatives from Audio Visual companies;  
and

- The TRA Board discussed, during a meeting in July 2010 with the Head of Media and Telecommunications Parliamentary Committee, MP Hassan Fadlallah the current situation of the telecommunications sector in Lebanon and the damages that could have potentially incurred due to the recent security incidents. The TRA issued the 'Guidelines on Telecommunications Network Security' in that regard titles "Security Requirements for the Telecom Networks in Lebanon" and focusing on mobile networks security.

### 3.5.2 Email communications

Since its inception, the TRA has put in place two widely communicated email address collecting various requests for information that are also accessible from the TRA website: [info@tra.gov.lb](mailto:info@tra.gov.lb) and [media@tra.gov.lb](mailto:media@tra.gov.lb).

The TRA has received hundreds of requests in 2010 that were related to general information about the TRA, media interview schedule, conditions of approval of the radio & telecom terminal equipment, spectrum and licensing among others. As a result, the TRA is regularly updating the Type approval Q&A section on the TRA website so that all stakeholders can benefit from this wide information.

At the end of 2010, and after having noticed the increased efficiency of electronic communications, the TRA created a third email address specifically destined to collect consumers complaints as a back-up to the already established complaints collection system via the 1739 hotline: [complaints@tra.gov.lb](mailto:complaints@tra.gov.lb).